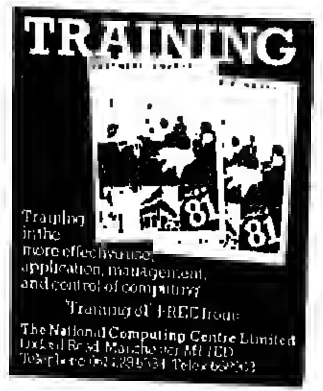


ComputerWeekly

NEWS BRIEF

Robots to get DoI backing

ADVICE to firms on how to introduce robots should soon become more readily available. The Department of Industry hopes to extend its consultancy funding scheme, at present limited to the Production Engineering Research Association, to pay for 50% of the work done by independent consultants as well. At the same time, the British Robot Association is starting a campaign to convince industrialists of the benefits of automation. Thousands of brochures are being sent out, and an exhibition on robots has been set up at the House of Commons.

Shugart licence

SHUGART's UK distributor CPU Computers is to manufacture Shugart peripheral controllers under licence for the whole of the European market. The single board controllers can handle a mixture of floppy and fixed disc drives and streaming tape drives – up to four units in all. CPU expects to build 2,000 of them this year.

Pros' bureau

THE British Institute of Management and the P-E management consultancy have formed an accounting and registration bureau service for professional associations. They have chosen an ICL ME29 for the project.

Package holidays

A COMPUTER bureau travel agency package for ticketing, invoicing, credit control and accounts management is available from Gordon & Gotch of London. Cost of the system is based on the weekly volume of the agent's business.

Users welcome 'end telecoms monopoly' call

by Donald Kennett

DESPITE harsh criticism from British Telecom and the Post Office Engineering Union, last week's Beesley report, recommending complete liberalisation in the use of British Telecom's circuits, has received considerable support from groups representing telecommunications users and the industry.

The Telecommunications Users Association, Telecommunications Managers Association, Telecommunications Council and Business Equipment Trade Association have all responded that they are pleased with Professor Beesley's recommendations, that their own evidence to the Industry Secretary has been along similar lines, and they hope the recommendations will be ratified by the government.

In addition to value-added services not provided by British Telecom, which last July Sir Keith Joseph said private operators would be allowed to offer, Beesley recommended that privately run services should be permitted in competition with British Telecom's services.

He went further outside his remit to suggest that private companies should be able to provide switching and transmission facilities for publicly available alternative networks and that they should be able to re-sell capacity on international leased circuits.

Announcing publication of the report, Sir Keith said he was inviting comments over the next two months before coming to detailed decisions in July. Only "an effective demolition job by British Telecom" was likely to defeat Beesley's recommendations, he said, and he doubted there was a unified view within BT.

Information Technology Minister Kenneth Baker added: "Beesley is well argued, a very good document, and the situation is measured against what has happened in the US."

However, critical responses have come from British Telecom and the Post Office Engineering Union. BT chairman Sir George Jefferson said that unrestricted competition might benefit some in the short term, but would be likely to mean a substantial rise in prices for the majority.

The implications of the report on the ability of British Telecom to finance the modernisation of its system, and to introduce new services could be very serious, he added.

POEU general secretary Bryan Stanley said: "This report represents a most serious threat to the whole telecommunications system in Britain.

"The firm conclusions are simply not supported by the conflicting and confused analysis."

Beesley stresses the need for removal of constraints on BT's capital investment, another suggestion on which he goes outside his terms of reference, but says that even with the constraints the prospective benefits to consumers would outweigh the prospective losses to BT's revenues.

Sir Keith said the experience in the US had been that 10 years after liberalisation, non-AT&T companies had only 4% of the market and the main effect had been to stimulate AT&T itself to provide more and better services.

Following Beesley's recommendations, said Sir Keith, would "unlock talent in BT itself."

POLLARD: "I'm no computer person in the programming sense but I can do what I need to very easily with Roscoe."

ADR redesigns Roscoe system

by Claire Gooding

DOYEN of the software products industry ADR is poised to launch "a complete redesign" of its widely used online program development system Roscoe.

ADR claims the system has the biggest share of the market not held by IBM's own TSO/SPF product, with sales to over 1,000 IBM mainframe sites worldwide.

Version 5, as the new development is called, has been designed to preserve the superficial part of the package already familiar to programmers, while rebuilding from the inside to give facilities such as the high-level interactive language RPF to general users, says ADR.

"What's happened is that a lot of changes are the direct result of requests from users," explained UK managing director Nick Pollard. "Any product needs revitalising at some stage. Now we have a product that can go into the 80s without further fundamental changes." The updating has taken two years.

The latest version has a new high-level command language and 18 new terminal commands, a comprehensive online HELP facility and changes to the Active Work Space and libraries.

Pollard, who describes himself as a novice user, says of RMF: "It does well for the guy who wants to change his programs on demand. By the end of the day he has something useable."

Nixdorf lands top bank deal

by Keith Jones

NIXDORF has won the biggest order ever placed in the Republic of Ireland for computer equipment. The customer is the Bank of Ireland, an ICL 2900 user, which has chosen Nixdorf 8864 terminal systems to equip its 356 branches in Ireland and the UK. The order is worth about £5 million to Nixdorf.

A Bank of Ireland spokesman said that ICL was among the last eight bidders for the contract, but that Nixdorf's competitors in the last four were IBM, Olivetti and Philips.

He stressed that no political pressure was applied on the bank to choose the Nixdorf kit, even though Nixdorf now employs 300 people at its plant at Bray, County Wicklow. The reasons for selecting the 8864 were to do with technical considerations and quality of support.

The Bray plant builds memory units and keyboards for 8864s shipped to customers all over the world.

The 8864 will be used for branch accounting and data capture, transmitting data to the bank's Dublin computer centre initially over dial-up lines. Leased lines will be used when they become available.

First 8100 service

SHEFFIELD-based bureau GMS Computing is claiming to be the first to offer a distributed processing service based on IBM 8100s at user locations. Dismissing adverse reports about the 8100's performance, GMS, which has installed three of them, says that response times are well below five seconds in "multi-terminal situations".

OPM UK prepares for voluntary liquidation

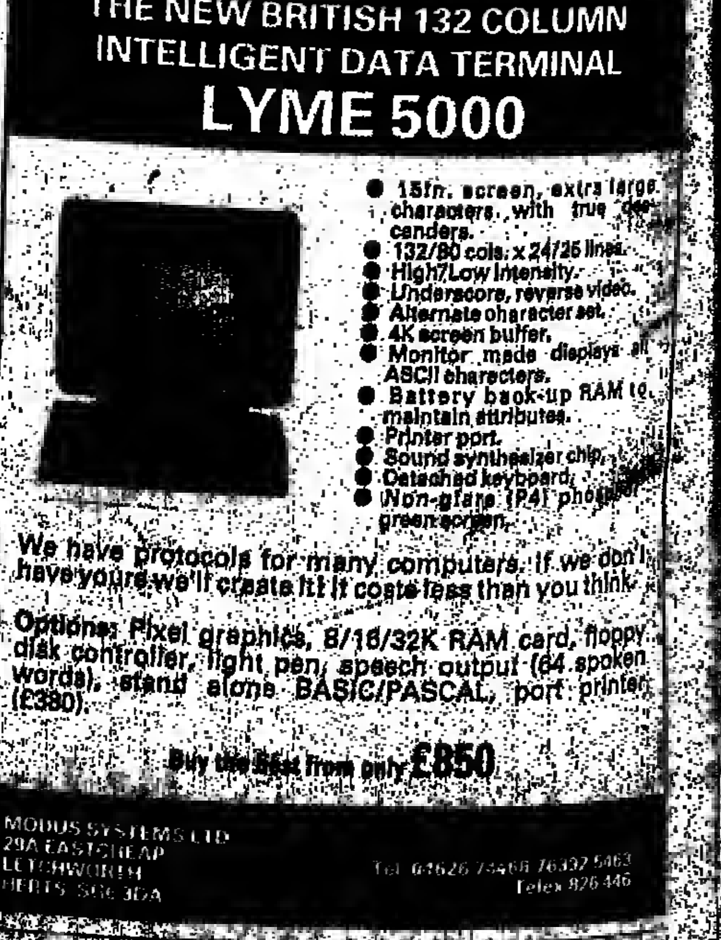
WITH US computer lessor OPM in dire financial straits and up to its eyes in litigation, its UK subsidiary is taking steps to go into voluntary liquidation.

OPM UK managing director Mori Arjell said that his company had waived all rights to the residual values on its lease base of IBM mainframes. The leases had not been taken over by another lessor, so the lessees themselves would probably have to assume responsibility.

The demise of OPM UK means that [illegible] such as Lucas, ICI and Dunlop will not be able to take advantage of the "walk away" deal offered by OPM, under which they could terminate a lease after an agreed period of time, say, four years.

OPM would have taken full responsibility for remarketing the machine and paying what was still owing to the banks that financed the lease. Now these lessees will be faced with a full payout.

OPM in New York filed for bankruptcy under Chapter 11 of the US bankruptcy laws last month and is being run by a court-appointed trustee rather than its [illegible] officers.



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Collapse of high technology investment trust

Blow to small firms' funding

by Kevin Cahill

AN important source of funds for small computer companies has been inexplicably closed off by the failure of a high technology investment trust to attract backing.

The collapse of Electra Investment Trust throws doubt on the prospects for six computer companies which are expected to try to raise money for themselves through the Stock Exchange later this year.

Electra last week tried to raise £20 million for investment in small but promising computer and other high technology companies, but managed to attract only £3.5 million. This is less than half the minimum £7.5 million felt by the directors to be sufficient to make it a going concern.

The trust was trying to pull in money from private investors attracted by tax concessions in last year's Budget. These allow losses in new companies to be offset against income tax. Electra would have transferred shares in companies it backed with investors' funds to the individual investor allowing him to obtain the tax advantages.

The news of the failure will hit the prospects for LSI, Norsk Data and Star Computing which are three of the six computer companies known to be planning an offering of their shares to investors. LSI joint managing directors Tom Fitzpatrick and David Johns have plans well advanced for a major fund-raising operation, first to place some of their shares with private backers, and later to go for a full launch to the public. Details of the offer are expected by the end of May.

FITZPATRICK: Aiming to attract investor's cash to LSI

Norsk Data is understood to have appointed already County Bank as its adviser in preparation for a launch of the shares on the Stock Market in June.

Turnkey systems house Star Computing is another candidate for a placing, and is already well known in the financial community through its Star Auditor package aimed at accountants.

Three other companies are expected to try to raise almost £2 million for their own expansion. Despite the recent Stock Market boom which has seen the share index climb to an all-time high, all these placings – and the funds they are trying to attract to fuel growth of the companies – are now in danger.

John Deane, general manager of Lucas Logic, the computer applications arm of Lucas Industries, announces the company's acquisition of the Nascom range of microcomputers.

Nascom bought by Lucas

by Eileen Stalner

FRESH hope for Nascom users has emerged with the announcement that Lucas Industries, the transport engineering company, has bought the business from receivers W. H. Cork Gully.

Lucas Logic, part of the Lucas group, is to incorporate the Nascom microcomputer and its associated products into its computer applications arm.

The move is a diversification for the international engineering company into the field of hobbyist computers. "It gives us our own in-house computer which we can sell as a package deal in the industrial sector," said John Deane, general manager of Lucas Logic. "We now have a full range of applied computer systems," he added.

Priority will be given to the hobbyist market, said Deane, but this will lead to the setting of competitive prices in the industrial field. The existing price policy will be adopted initially.

"Our first priority is to satisfy the requirement for Nascom IIs and complete the shortfall," said Deane. Demand for Nascom IIs has been increasing since the company went into receivership almost a year ago. Since then an attempt at reviving the company by Peter Matthews of Allteck Technology Initiatives failed when payment for the assets became overdue.

Second phase in the plan is to study the product in the long term and decide upon improvements, additions and future developments.

NEWS BRIEF

Unions give no-confidence vote in ICL

THE management of ICL has agreed to meet union representatives soon, following a no-confidence vote in the company's management by the unions.

A joint union conference in London last week unanimously passed a motion declaring "a lack of confidence in ICL's senior management". The meeting included ICL staff as well as union representatives and a report issued by ASTMS, the biggest union involved, said the government's £200 million loan guarantee "was the wrong type of support for the company".

Prestel fees up

SOME Prestel charges are to go up from July 1, the first increase since the service started in September 1979 and the minimum necessary to keep it on its financial targets, according to UK marketing chief Frank Burgess. The standard rate time charge (from 8am to 6pm) is to go up from 3p to 4p a minute. Other charges and rentals stay the same.

BT denial

REPORTS that British Telecom is to close down its regional mainframe computer centres and install 600 ICL ME29s at more than 60 telephone area sites have been denied by the organisation. A BT spokesman said that such a move had only been considered in an internal review.

Syfas for BA

COMPUTER Automation has formally announced an order from British Airways for 10 of its Syfa minicomputers. They will be used to handle BA's new passenger accounting system, Sopas.

Supersystem for London

by Keith Jones

AFTER a long wait, the University of London Computer Centre looks set to get the supercomputer system that it wants to add to its nationwide network facilities. [illegible] has just placed an order [illegible] Amdahl for an IBM compatible V/8 mainframe and says [illegible] will act as a "support [illegible]" for a much more [illegible] machine. [illegible] Research, one of the [illegible]gest contenders for this ULCC supercomputer contract, is also talking to the University of Manchester Regional Computer Centre which is planning a parallel operation to ULCC.

In operation the Amdahl V/8 will be used to run a wide range of jobs for university departments but it will also act as a front end to the ULCC supercomputer.

Cray says that its machines are already front ended by Amdahl computers at several sites including its own installation in Minneapolis and at the Max Planck Institute in West Germany.

A Cray machine could be linked channel to channel with the V/8 and would also pose no problems in interfacing with the Tesdata Hyperchannel high speed data highway just installed by ULCC to link its mainframe computers. According to Cray, several of its machines are already working with the Hyperchannel.

But Control Data could also be a major contender for the supercomputer contracts with its Cyber 205. The existing mainframe kit at ULCC consists for four Control Data mainframes, including a 7600. There are also 7600s at Manchester.

Dr Henry Norton, secretary of the universities computer board, pointed out that both London and Manchester could still opt for a multiple conventional mainframe approach.

Strike spreads to the Swansea centre

by Nicholas Enticknap

ANOTHER government installation, the Driving and Vehicle [illegible] Centre at Swansea, has [illegible] the list of computer [illegible] by the Civil Service [illegible] the total affected [illegible] maintenance engineers [illegible] for the air conditioning of the installation, which is [illegible] ICL System 4 equipment [illegible] been called out on indefinite strike, a move which is expected to shut down the installation before long.

The extensive programme of industrial action at other government installations, notably the Inland Revenue centres at Cumbernauld and Shipley and the VAT centre at Southend, is continuing, despite the new initiative by Lord Soames last week aimed at breaking the deadlock. It was predicted that the effect of this stranglehold on the government's purse strings would be reflected in the money supply figures due to be released this week, which are expected to show a significant increase in the public sector borrowing requirement.

The dispute between the Banking Insurance and Finance Union (BIFU) and the major clearing banks continues amid a welter of conflicting claims about the effect of the second phase of industrial action, last week. The banks are claiming that only 6,000 BIFU members took part in the stoppage, that only 141 bank branches had to be closed, and that other areas of banking activity were minimally affected.

The union claims that 11,000 members came out on strike and that 300 branches were closed.

INSIDE THIS WEEK'S ISSUE

Donald Kennett reports on two products for in-company communications

Fibre optic coms ring launched

AN optical fibre based local network ring has been launched by Syscon, a two-year-old, five-man company based at Cambridge Science Park.

Aimed at applications where electronic transmission is undesirable – where there are earthing problems, different base voltage levels, electrical noise, fire hazard, or risk of tapping – the system, called ODR-1, is designed to provide a basic set of facilities and to stimulate demand for features which could be incorporated into a range of future models.

Interfacing the low-cost plastic fibre to the electronics is done by glueing and crimping the semiconductor device on to the end of the fibre and potting it into a screened multiple-contact jack plug with resin. Later higher performance versions are likely to use conventional fibre jointing techniques.

Managing director James Brotton said: "Our main business is designing systems for special requirements and we would like to see people coming back with special requirements for this system. We've had discussions with companies about requirements in principle and we think they can get a clearer idea when something actually exists.

"It can be used as it is for plant control, but we would like to see it in offices, in which case the controller needs to be an intelligent switch. One potential customer is looking for a complete fibre optic telephone exchange and we may be asked to develop it if he can't find one."

ODR-1 is offered as a package for £5,950 with one controller and 15 mains-powered slave stations separated by 25 metres of optical fibre cable. The ring itself runs at 500Kbps.

Voice and data traffic on local network

VOICE as well as data traffic will be carried on the Silk coaxial-cable-based local network ring which was launched in the UK last week by Hasler, subsidiary of one of the main Swiss telecommunications manufacturers.

The company makes its own digital telephone handsets with liquid crystal numeric displays for use with the system but, with a price of £1,400 per extension in small quantities, it is expecting early Silk users to concentrate on data applications.

An intermediate use could be to link private automatic exchanges and branch exchanges. Although these could be linked directly, using Silk is said to reduce the complexity of the cabling between many such exchanges and make it easier to provide extra facilities such as transfer of calls across the whole system.

For data applications, users can start with an eight-port line concentrator at £3,200, which can switch calls between terminals attached to each of the V24 ports.

The next stage is to attach up to seven of these concentrators to a "local block" via X21 digital ports. Up to 150 local blocks can then be connected via the coaxial cable ring, giving a total of up to 8,400 terminals on one ring, communicating at up to 9,600 bits per second.

Data rates elsewhere in the system include a raw rate of 16 megabits/second on the ring, giving a usable rate of 10Mbps, 256Kbps at the local block ports and 64Kbps in the telephone handsets. A fully connected system is expected to have about 10% of its terminals communicating at one time. Quoted capacities are 1,100 9,600bps terminals, 220 48,000bps terminals or 120 digital telephones in simultaneous communication.

Application is being made to British Telecom for approval to attach to PABXs for communication over the public network, but permission to attach directly to the network will not be sought in the immediate future.

Widespread use of the voice facilities will depend on finding systems houses wanting to buy in sufficient quantities to kick off a price drop. Another possibility is that enough early customers will choose the system irrespective of cost because it offers such features as displaying a caller's extension number on the receiving handset, or showing a caller where his call is being re-routed to.

Suppliers are finding their customers want a system that helps reduce the number of complaints of "I called but you weren't there", according to Silk product manager Brian Jackson.

Future developments include the possibility of adding a V24 interface to the telephone handsets. "An order for 1,000 would be enough for us to offer a product at very nearly the same price as the phone on its own," said Jackson.

The system, which is based on the register insertion principle, has been under development since 1971.

JACKSON . . . Possibility of adding a V24 interface to telephone handsets.

Blumenthal

Major changes at Burroughs

by Keith Jones

MICHAEL BLUMENTHAL, brought in by Burroughs to shake up its ageing management structure, has released details of what are described as "major changes" in the company's organisation.

To make sure its engineering and manufacturing operations fall into line with the customers' future needs Blumenthal, who took over as chairman late last year, has given the Corporate Product Management department responsibility for all aspects of hardware and software product planning, not just market research.

He has also appointed a new man to head the operation, William Conlin. He succeeds James McCullough who has retired after 40 years with the company.

In an interview in London in March, Blumenthal identified a lack of forward planning as one of the company's serious weaknesses.

Commenting on the change Blumenthal said that Corporate Product Management would become the "integrative organisation" between engineering manufacturing and marketing.

It will be staffed by product managers responsible for key categories of products and systems, and by a line of business managers who will define market requirements for Burroughs systems within specific business areas.

No doubt to counter suggestions that Blumenthal is bringing in all its new top management from outside, Burroughs points out that Conlin is "a 21-year Burroughs veteran". But Conlin is the only "veteran" on a new six-man committee set up by Blumenthal as the company's senior policy and decision making body.

Early this year Burroughs set up an Office Systems Group with headquarters in Danbury, Connecticut.

Contract staff in tax protest

by Kevin Cahill

ANGRY contract programmers have been in touch with their MPs and trade organisations following revelations that clause 34 of the Finance Act now before Parliament could jeopardise their livelihood. The clause would force contract agencies to deduct a flat 30% from payments to contractors and pay it to the Inland Revenue in lieu of their tax.

The Forum of Private Business, an independent body set up to look after the interests of small businesses, has circulated 125 agencies in the computer industry with a questionaire to gather opinion to present to MPs prior to the clause going into committee at the Commons by May 12.

Stan Mendham, chief executive of the Forum, which is based at Knutsford, Cheshire, said the clause looked as if it could be seriously detrimental to government aims of stimulating small business development.

The Forum of Private Business has arranged to meet Treasury officials tomorrow, May 1.

Protestors say the clause will cause a reduction of 30% in cash flow, additional forms to fill in, and will probably yield no additional revenue by the time claims for refunds have been submitted to tax offices.

The original intention of the clause was to close possible tax losses occurring through contractors who failed to complete tax returns for their companies.

Basic compiler deal

by Claire Gooding

THE Basic compiler, designed to compress Basic code and speed its execution, is to be marketed exclusively by Dataview of Colchester, the company which achieved worldwide sales for the Wordcraft word processing system.

DTL-Basic was developed by a small firm in Dorset, Drive Technology, which has been looking for a suitable "publisher" to market it effectively in the US and Europe. "A lot of people approached me" said David Hughes, of DTL, who wrote the product, "but I went to Dataview because I was impressed by the success of Wordcraft."

Talks are already under way with US firm United Software about marketing the product in the US.

Key software takeover

by Philip Hunter

A SOFTWARE house, specialising in bespoke accounting packages, has taken over a hardware vendor to provide an outlet for some of its products.

Quadrant Computer Services, of Altrincham, which employs 100 people and has a turnover of £1½ million, has taken over Key Computers of Poole, Dorset. Key Computers is the main UK selling agent for the Britannia minicomputer and in the four months of its existence says it has landed the company £125,000 worth of business.

Tom Roe, managing director of Quadrant, met Roger Woods managing director of Key Computers when Woods was Northern sales manager of Philips Data Systems and selling hardware to him. Roe says the takeover should boost Quadrant's turnover by "about 50%".

The bulk of Quadrant's work hitherto has come in designing "made to measure" software for a variety of clients from home video upwards. The takeover should enable the company to enlarge on its package market.

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Appointment of American master dealer is top priority

World standard bid for MicroCobol

by Keith Jones

DESPITE losing Alex d'Agapeyeff, MicroProducts Software, the new independent firm that has taken over the business of CAP's Microsoft division, still hopes to pursue the ex-chairman's ambitious plans to make MicroCobol a de facto world standard. Top of the company's list of priorities is the appointment of a "master dealer" in the US for MicroCobol-based products.

The managing director of MPSL is Alistair Jacks, former marketing manager for CAP Microsoft, and he jointly owns the new company with four other directors including Esmond Hart, chief designer of MicroCobol. They are paying CAP for the Microsoft operation over a ten-year period in amounts proportional to its level of sales – a form of royalty. CAP managing director, Mike Smith, said that the overall price "reflected CAP's £2½ million investment in MicroCobol development."

According to CAP, its main justification for hiving off Microsoft was increasing conflict of interest with the computer manufacturers that use its applications software products.

The birth of MPSL has not been without complications, notably the new company's loss of the man who originally was to head the operation, CAP founder Alex d'Agapeyeff. He relinquished his chairmanship of the CAP Group early this year to concentrate on running MPSL, but quit a few weeks ago because of his failure to raise enough outside capital to realise his ambitious plans. He remains a major shareholder in the CAP group.

Alistair Jacks believes that d'Agapeyeff's aim was realistic but ought to be seen as a longer term goal. The proliferation of MicroCobol will be much less speedy judging by Jacks' aim of achieving sales of £750,000 in MPSL's first year of operation which started on April 1. Last year's sales figure was £600,000.

Asked about MPSL's marketing strategy, Jacks said that MPSL would continue to work out of CAP's offices in London and the US for another six to nine months. A separate office is then planned for London while the US marketing operation will be transferred to a US-based and owned master dealer which will take over the management of the 20 existing MicroCobol dealers in that country. The US master dealer will work with MPSL in London on the development of MicroCobol packages for the US market.

The MicroCobol product range is intended to provide users of many different commercial microcomputer systems with a wide range of applications software. But the portability is achieved by running the applications packages under MPSL's own operating system BOS, Business Operating System.

Versions of BOS are now available for machines based on the Intel 8080 and 8086, Zilog Z80, Texas Instruments 9900, Motorola 6800 and 6809 microprocessors.

Seen here with CAP managing director Mike Smith (left) is Alistair Jacks, chairman and managing director of newly-formed MicroProducts Software.

CMG to rent out own micro

by Eileen Steiner

CMG, Computer Management Group, is setting up a microcomputer rental service for small businesses using its own microcomputer. From offices throughout Europe, CMG will offer systems with a basic rental rate of £50 a week.

The hardware that CMG has developed over the last two years is a dual processor system using two Z80s, twin 5¼-inch floppy discs with capacities up to 1.6 megabytes, and running the Digital Research operating system, CP/M.

Called the CMG Micro, the system will be supplied as part of a service or complete system. CMG hopes to introduce a hard disc version which will take the storage capacity up to 96 megabytes and enable a network of systems to be created with several hundred Z80-based microcomputers attached to the main hard disc system.

In the network each terminal will be able to run its own program, access its own floppy discs with capacities from 320 Kbytes to 1.6 megabytes, access its own private area on the central hard disc and a common area on the hard disc.

Package provides legal aid

by Philip Hunter

SOLICITORS could benefit from an all-round software package aimed at medium and large legal firms. The package, known as Charter, covers five areas of legal work: Legal accounting; time-costing; payroll; word processing and management information.

Aim, a hull-based company, has developed the package in co-operation with several legal practices in the Midlands and North of England. The system will run on Digico M16 or ICL System Ten minicomputers, but Aim will also offer a bureau service based on its own twin ICL 2956 computers.

Basic edit speeded up

by Philip Hunter

ENHANCEMENTS to speed editing and compiling in North Star Basic have been announced by Digital Devices. They supplement existing facilities by adding global line editing, cross-reference listing and a machine code sort.

The "utility package" is aimed at the 700 to 800 users of North Star Basic in the UK, says Ross Henderson, computer services manager.

The editor provides line scroll, global locate and change, line insert and append, and erase columns. In addition, it can print direct from the screen.

A cross-reference facility prints formatted Basic listings with title, page numbers and a breakdown of the program by variable, function and subroutine.

Henderson says that a standard bubble sort, written in Basic would take 430 seconds to sort 300 random numbers, while Digital Devices' own shellmex machine code sort would take four seconds to sort the same numbers.

Software acts as disc

by David Craver

DISC access at processor speeds is the promise of a new software package for microcomputers. Called the Silicon Disc System, or SDS, the software enables users to add extra RAM boards which are made to appear as an additional disc drive.

The disc emulator package, which works on most Z80 based micros using CP/M or MP/M multi-user operating systems, has been developed by the one-man British company J.K. Systems Research.

Access to the simulated disc is claimed to be 100 to 500 times faster than a floppy, and in most cases no changes in existing programs are necessary.

Another one-man business, London based Microcosm, will market the package in the UK at £295, with a dealer discount of up to 60%.

French fury over £30m contract for electronic telephone directory

by Jack Gee

RIVAL French terminal manufacturers are angry over their Post Office's decision to give a single firm the entire order for 300,000 visual display units which will equip Brittany's pilot scheme for an electronic telephone directory.

The order is only the tip of a huge iceberg which could represent £1.5 billion of contracts between now and the early 1990s to equip 34 million French telephone subscribers.

Télic, a subsidiary of CIT-Alcatel which is itself a member of the Compagnie Generale d'Electricité, has scooped the £30 million contract.

Shares in the terminal order had been expected by Thomson-CSF, Matra and CIT-Alcatel which had all provided units for the original pre-production order of 1,000 terminals.

Thomson seemed particularly well placed in the competition for the pilot programme in Brittany because it has recently designed a new terminal which includes extremely advanced technology.

But Télic submitted the cheapest tender and also gave the shortest delivery dates.

The Post Office's Directorate-General for Telecommunications also regards CIT-Alcatel — Télic's parent company — as an excellent market developer for a product which the government hopes to market throughout Europe, beginning in West Germany.

The DGT added: "The Brittany order is a small one, too small to be split up among several firms."

The terminal order was announced unexpectedly as the French presidential election campaign neared its first round of polling.

But the electronic phone book and other videotex projects have not been election issues. The government has steered clear of them because they have provoked criticism from consumer organisations. The provincial Press is particularly worried about the threat to its newspaper circulations.

The green light for going ahead with a nationwide equipment programme will be taken after France gets its new government in May. Orders might be delayed until early 1982 since the Brittany pilot scheme continues until the end of next year.

Compensation for Télic's disappointed rivals will take the form of major optical fibre orders. This will be particularly good news for Thomson and Saint Gobain Pont-à-Mousson which are setting up a venture with America's Corning Glass, which is to be called Telefibres.

The terminal order will mean the creation of 340 jobs in France's telecommunications industry. CIT-Alcatel will be hiring 220 people at its factory in Guingamp, Brittany, which has been seriously hurt by job closures.

These followed the move from production of electro-mechanical phone exchanges to electronic types.

One of the Télétel terminals developed by Thomson-CSF Telephone, for the experimental viewdata network at Velizy, south of Paris.

Viewdata trial in 3,000 homes

by Jack Gee

FRANCE'S Télétel viewdata service will be brought into 3,000 homes in a Paris suburb in June to test public response to the system over the next year-and-a-half.

Households at Velizy, an industrial and residential area near Versailles, are being equipped with terminals designed by Thomson-CSF Telephone.

The keyboard can be either assembled as an external adaptor connected to a television receiver, or integrated into a television set at the time of manufacture.

The Velizy experiment will also give householders access to Antiope, France's direct one-way broadcast of radio signals over the national television network.

The Velizy venture will enable both professional and domestic users to consult a wide range of data banks. These will include timetables and news and stock quotations. Residents will also be able to perform multiple transactions such as banking, booking airline flights and train seats or ordering goods.

SALES BRIEF

Cipher sells tape drive to Burroughs

SALES of the innovative Microstreamer streaming tape drive have got off the ground in a big way with a massive OEM order from Burroughs.

According to the US firm that builds Microstreamer, Cipher Data Products of California, the order could be worth up to $20 million over the next five years, and many of the 20,000 units will be shipped to Burroughs' factories in Scotland.

As a result of the Burroughs contract Cipher's European subsidiary is opening a repair and support centre at Farnborough, Hants.

£4m minis for South Africa

ICL has won a major South African contract worth nearly £4 million for its 1501 minis. A network of 200 minis will link with a central 2970 using IDMS database and TPMS teleprocessing to control the stocks of the high street food chain Checkers.

Students' results

CONTROL DATA is to buy 12 Cromemco System Twos from Comart of St Neots in Cambridgeshire to run up to eight work stations at each of its six UK institutes and Plato learning centres. Chosen from a shortlist which included minis and bureau services, the systems are expected to accelerate students' learning time because the results of their work will be available to them within minutes, instead of after a 24-hour delay as at present.

BL terminals

VIEWDATA terminals from Philips are being recommended to car dealers joining BL Cars' Stock Locator system, which was launched earlier this month. The two models being recommended, a 14-inch colour terminal and the Pye Visa monochrome desk-top terminal, are to be supplied through Ansafone subsidiary Viewdata Business Systems, which is also offering maintenance and staff training services.

£½m project

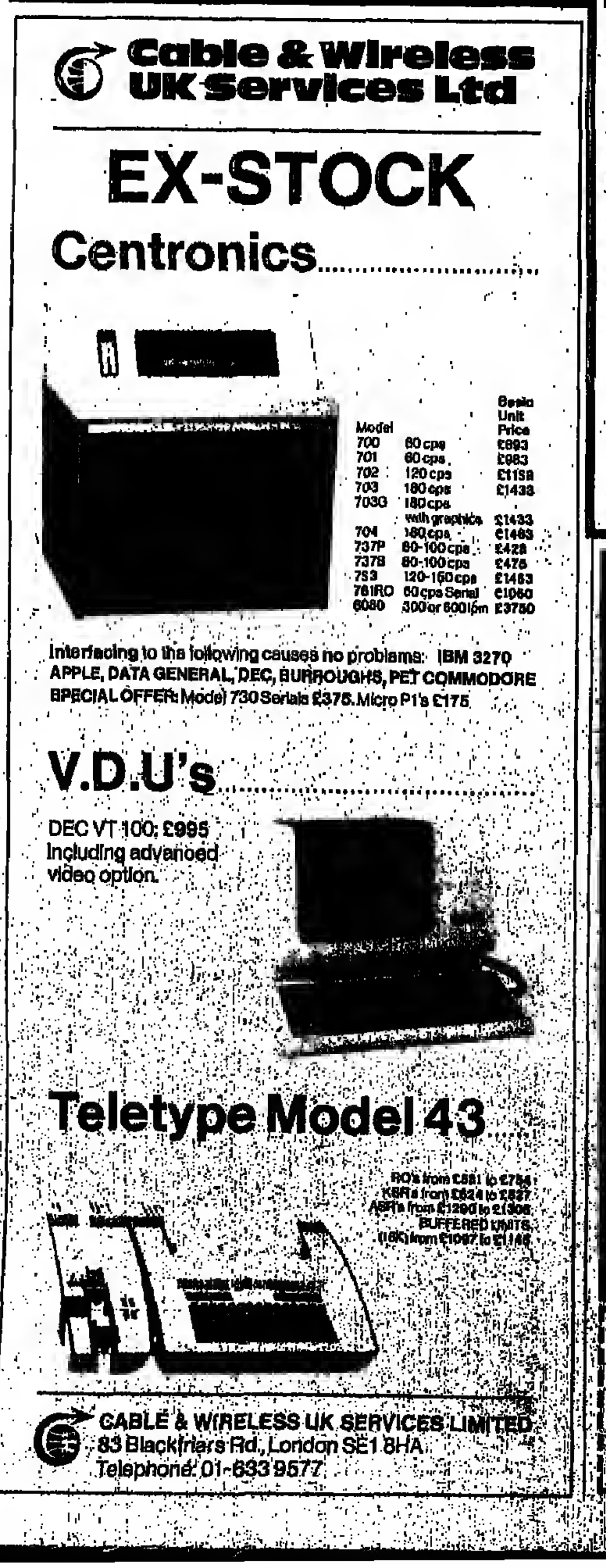
ACCOUNTS queries from any of the 800 staff restaurants run by Grand Metropolitan subsidiary Bateman Catering can now be answered by any of 34 accounts clerks manning 17 VDUs on the Data General Eclipse MV600 installed at head office under the £500,000 first phase of its computerisation project, completed recently. A payroll system for its 10,000 employees is to be added later.

Costing system

WATER treatment equipment maker Permutit-Boby has chosen a Computer Technology CTL 8040 to replace accounting machines and bureau services to handle sales and invoicing, inventory control and contract costing. It will develop software in Fortran and Basic to aid in the design of its products, as well as contracting with CTL software house Sharpe Bennett Associates for further financial programs.

Bakery micro

BAKERY control is the task of store for the Ontel microcomputer to be supplied by Edinburgh-based Emeth Systems to Falkirk family bakery R. Mathieson & Sons. Designed to be operated by existing personnel, the system is to be supplied with programs for recipe costing, production control and invoicing tailored to Mathieson's requirements by Emeth, as well as standard programs for payroll and other accounting functions.

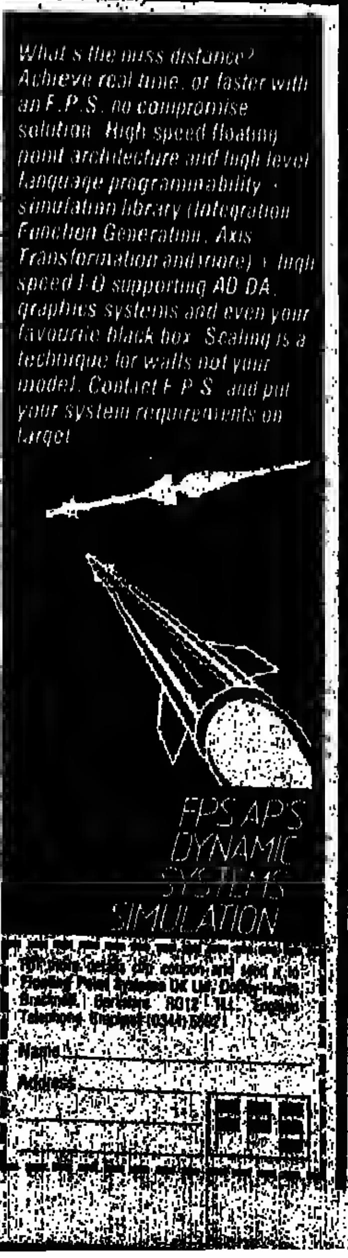


Hand-held terminal

OFFERING many features of a conventional desk-mounted terminal the hand-held Pocket VDU (pictured left) launched by GR Electronics of Newport, Gwent, comes with a 1600-character memory, a 40-character LCD display and full cursor controlled editing facilities. It is powered from rechargeable Ni/Cad batteries said to provide up to 24 hours of continuous operation.

The Pocket VDU is intended for use primarily in interactive applications although it can also be used for data collection, pouring data on to a cassette recorder.

The unit is housed in a strong case measuring 215mm long by 153mm wide by 45mm deep.



Exhibition bid to boost Middle East trade

THE fastest developing business community in the world — the Middle East — is still short of computers, and Computer Weekly is co-operating in a joint venture to assist marketing there.

An exhibition organised by the Dubai Trade Management Centre and Computer Weekly aims to get hardware, software, micros, peripherals and accessories to private and government sectors in the Gulf. It will take place from December 15-19 at the Dubai International Trade Centre, the £108m complex opened by the Queen in February, 1979.

The Centre, which was visited by Prime Minister Margaret Thatcher last week, has a conference hall which occupies 30,000 square feet.

Manufacturers which have set up offices and agencies in the Gulf are reporting growth rates of 20%. Some claim as much as 100% growth.

The exhibition will be promoted to directors, senior management and government officers in the UAE, Qatar, Oman, Bahrain, Yemen, Kuwait and Saudi Arabia.

Companies wishing to exhibit should contact the management at The Gulf Computer Exhibition, Dubai Trade Centre Management Company Ltd, PO Box 9292, Dubai, UAE.

ICL takes £300,000 orders for new key-to-disc system

by David Craver

ICL is to market a new key-to-disc system as part of its continuing marketing arrangement with the Canadian firm Consolidated Computers. A renewal agreement between the two companies was signed at the beginning of this year.

The product, the Key Edit Series 2, is the successor to the 8950 and 8959 systems, and is said to have 40 times the disc storage capacity and twice the processing power. The system can accept input from up to 32 keyboards, compared to 24 previously.

ICL so far has taken orders valued at over £300,000 for the new equipment, with the first shipment on its way to Dowty Rotol, an aerospace and defence systems engineering company.

The Key Edit data entry system consists of a 16-bit minicomputer with a possible 256 K-bytes of main store, up to three EDS 80 disc drives with 80 megabytes capacity each, a keyboard and 1920 character display terminal, with options for a slave processor having 64 K-bytes of store, 300, 600, and 1120 lpm printers, and up to four magnetic tape units.

RPL may help win you over to decision table languages

Despite the fact that Basic has rapidly become a standard programming language for minis and micros, there is a challenger, which to date has been installed at over 120 sites world-wide.

While many programmers were put off decision table based languages because of memories of the early Cobol pre-processors, RPL is nearly as easy to learn as Basic.

Chris Youett talked to Dave Almond, a principal consultant with Filetab Support Services, who compares his firm's protégé to Basic and Basic Plus.

His frank assessment will cause howls in the Basic camp, but RPL, for all its sins, does enjoy a healthy reputation with its users. Almond is currently working on high-level report writing in RPL.

by Chris Youett

MANY programmers were put off decision table based languages owing to experiences with the early Cobol pre-processors. However, a product from Filetab Support Services looks as if it is a clear favourite to reverse this trend.

Called Rapid Programming Language, RPL, it was developed by Tom Barnard in conjunction with Alan Browne of Airfix Industries after the plastics giant replaced its ICL 1900 kit with Digital Equipment based systems.

Airfix had a big investment in the Filetab decision table based language and did not want to spend a lot of money re-writing its systems into traditional programs.

According to Filetab's principal consultant, Dave Almond, there was no decent commercial language for PDP kit either, even though Basic had been around for a long time. Airfix decided that it wanted something at least as good as Basic Plus. The result was RPL, for which Filetab now has exclusive world rights.

RPL is controlled by free format statements input through a terminal. Input can be directly to RPL for online syntax checking and compilation or offlined in a file for compilation later. It is designed to be portable and to operate under most DEC operating systems including RT/11, RSTS and RSX.

Compared with RPL, Almond said Basic and Basic Plus were very much dependent on operating systems. The nature of Basic Plus can vary from installation to installation. On some, it represents only a small advance on ordinary Basic while at others there are plenty of benefits often developed by enthusiasts.

Basic was developed at Dartmouth College, Massachusetts in 1969 for teaching students the essentials of programming very quickly. One of the first UK institutions of learning to install the system was Hatfield Polytechnic, in Hertfordshire. There all students learnt to program in it on a DEC-10/50 in a real time mode.

Even its harshest critic would admit that it is probably the easiest programming language of all to learn, and this is a major reason why Basic is now virtually the standard for microcomputers, especially the home brew enthusiasts. Even Almond admitted that the language had a slight learning edge on RPL.

However, it is when one edges towards the hard commercial world that Basic can start to fall down. RPL is self-documenting while Basic is harder to read. Both languages are concise and flexible, Basic having an edge on the technical side.

At present, RPL has over 120 users compared with the vast army beavering away in Basic. This presented problems with staff recruitment, said Almond, but while there were plenty of Basic programmers, DP managers would have to fight a bit harder to get them.

Both languages were well proven, but developments on RPL were in response to users' requests while Basic seemed to be in the hands of committees, Almond added.

Filetab has yet to set up a user group but this will be put right when time is available. Basic users could join Decus, he said.

On programming, RPL has good file handling capabilities which are partly automatic. The language also had its own file structures — chained variable length records — built in. However, Basic scored on data manipulation, while RPL's could be long-winded owing to its reliance on two operands.

RPL has excellent screen handling capabilities built in. These are arranged in picture image format and provide automatic data validation.

Field validation was taken out of the programmer's hands, said Almond, as RPL will handle the data in previously defined ranges. Handling verbs are available, but these must be programmed in by the user.

Basic, as can be expected for a technically based language, handles strings and arrays of data very well.

RPL has optional fixed logic such as SORT, TABULATE and PRINT. This logic handles basic task functions such as control brake testing, totalling prints and embedded sorting, something which Basic does not go in for, said Almond.

The logic specifications were great as long as one liked decision tables, which were largely free-format and tended to form natural modules. Basic tended to rely on the primitive use of sequence numbers, said Almond. This facet could be used to insert late coding but, in his opinion, did not encourage programmers to write good programs.

On testing, RPL would compile object files quickly. While this was an apparent benefit to the DP manager, it would have to be carefully controlled as there was a danger of the programmer fixing one bug at a time, Almond added.

Basic was usually fast only when it was being compiled in real time mode. However, it was possible to debug line by line without having to recompile every time, Almond admitted. This could give Basic an edge, partly due to its interrogative mode.

On maintenance, Almond believes that RPL has a clear advantage in its naturally modular structure. This tends to impose controls on the original program and forces the programmer to adopt reasonable standards of programming specifications — something which Almond is very keen on. Basic can be unwieldy and it could be easier on some occasions to rewrite the program. However, this is not necessarily a disadvantage as Basic is always easy to write.

Filetab supplies operating system communications verbs in the language, and this enables it to be transferred easily to other machines in the PDP range. In theory, the user should be able to run RPL programs on the VAX machines. Basic also has good operating system communications but the programs are not always portable.

Almond said that RPL gave good run-time performance and what Basic users needed was a compiler with good debugging aids and a fast version for production runs.

Both languages required run-time systems, and the user could find it expensive at installations using RPL and Basic because RPL has a higher core overhead than Basic.

Getting the job finished on time

DECISION tables are still something of a mystery in sections of the computer industry. Depending on whether your DP lecturer was a systems analyst or a programmer, decision tables would either make all programmers redundant by 1980 or would never catch on.

In the past 12 months, hardware has become 10% more efficient while programmers have only been 3% more productive. Many DP managers are finding that the cost of traditional methods of installing a system more than cancels out the real drop in hardware costs.

So how does the DP manager get his/her systems finished on time, assuming the installation is lucky enough not to have any vacancies? Structured programming is one method, so its supporters claim, of raising productivity. But the methodology is only what good programmers have been doing anyway.

There are plenty of aids on the market, such as data dictionaries and database management systems. However, these are of little use if 90% of systems development is spent on flowcharting.

It is in this area that decision tables can help. The main difference between commercial and scientific programs is that the former has a lot of data with a small program while the latter has little data but a long program.

In theory, all programs can be broken down into yes/no decisions. This is called the condition stub. In real life, decision tables are more common than most of us realise. They include railway timetables, menus, tax tables and interest rates.

Here is a simple decision table based on a railway timetable:

X to A	Y N N N
X to B	N Y N N
X to C	N N Y N
X to D	N N N Y
Platform 5	X — — —
Platform 6	— X — —
Platform 7	— — X —
Platform 8	— — — X

From this example we can see that for a journey from X to destination D we need to take a train that stops at Platform 8.

We can see a decision table which is always set up as an arrangement of four blocks:

1	2
3	4

Block 1 is the condition stub which asks: "What are the conditions to be examined?"

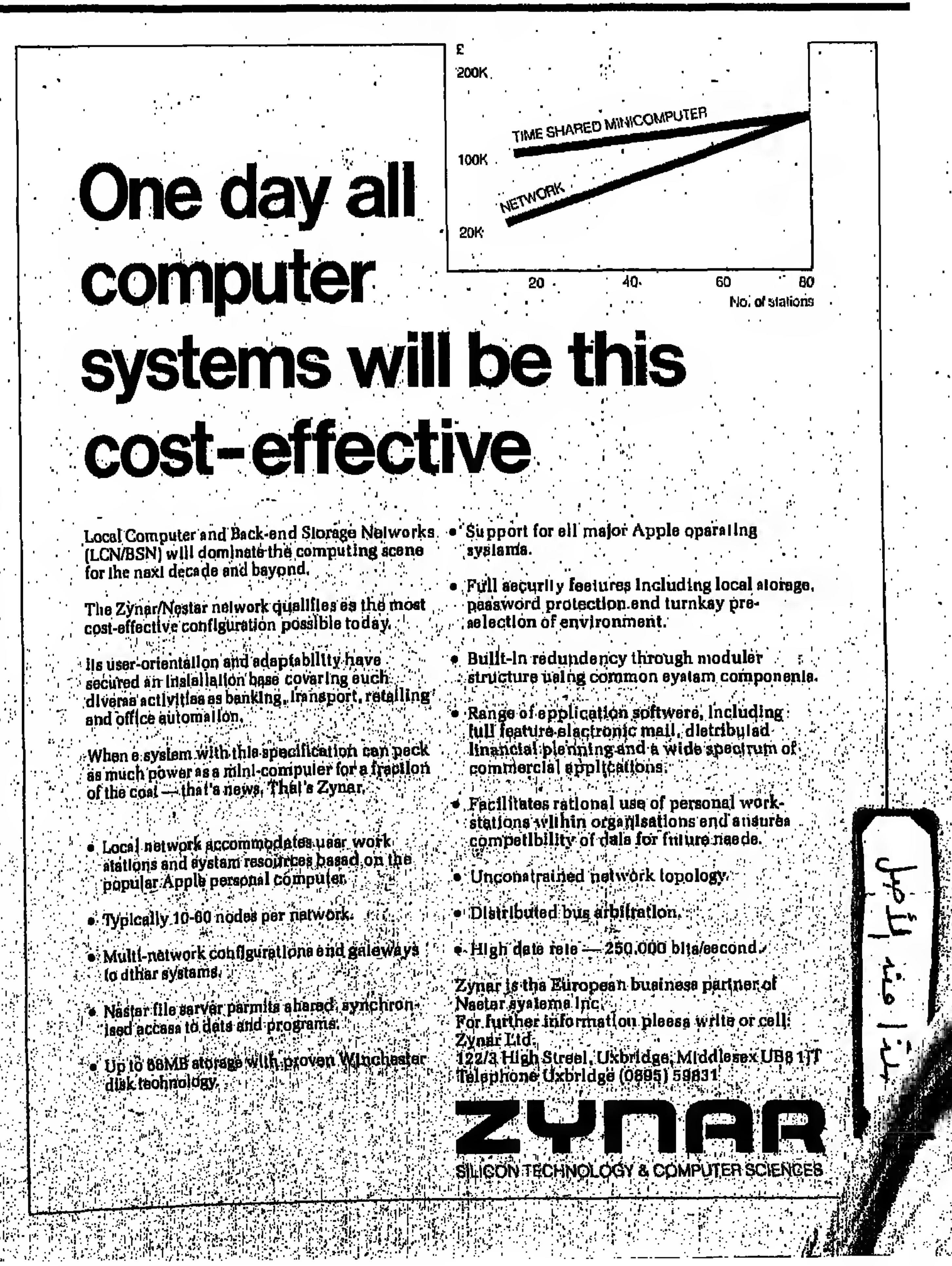
Block 2 is known as the condition entry and lists answers to the question "What values do the conditions have?"

Block 3 is the action stub. It contains a list of answers to the question: "What value does the action have for the equivalent condition entry?"

Block 4 is the action entry. For each entry in the action stub, it contains an answer to: "What value does the action have for the equivalent condition entry?"

Safe for small systems

SOFTWARE products for small systems will be the responsibility of Safe Computing's new Mini-Micro Systems Division. A maintenance control system for small companies and an integrated system for jobbers are under development, and the products will be marketed through a network of UK and overseas dealers. Projected turnover for the new Leicester-based division is £3 million in the first year. Safe Computing is a subsidiary of Chubb.



Borland to set up Welsh micro factory

by Eileen Stainer

KERR BORLAND, ex-marketing director of Nascom Microcomputers, is about to open a microelectronics factory in Arfon, North Wales.

Initially the factory will concentrate on microcomputer peripherals including some for the Nascom model, then it will move on to more advanced projects including dedicated micro-based systems.

Operating under the name of Arfon Microelectronics, the company will be run by two directors, Kerr Borland as managing director and Mike Lambert, who was also with Nascom, as financial director. Borland is still looking for a quality manager and a purchasing manager.

Since his departure from Nascom Borland has set up a company of his own, Product Launch, based in Potters Bar, which has taken on consultancy marketing work for micro-based products. He has also managed Specialist Micro Design, a consultancy design operation formed by the ex-Nascom design team.

In the new venture Product Launch will become a wholly-owned subsidiary of Arfon Microelectronics, and SMD a shareholder, although it will act as the entire design division of AM. At the moment the design team is working on products for 1982, having completed six designs for this year.

Borland sees the three concepts interrelating to become one complete task. SMD's clients will have the use of AM's factory for the manufacture of their recently designed products, and Product Launch will be able to market them.

The factory, on 20,000 square feet, is being leased from the Welsh Development Agency which, as the major single investor, has a 30% stake in the company. The WDA is offering this incentive to prospective companies to try to decrease the 25% unemployment rate in the area.

Arfon Microelectronics will have 80 jobs available in the first year and more, depending on the company's expansion rate, in following years. On a 25-year lease the factories are expandable to double capacity if necessary.

AM also qualifies for many of the regional grants in Wales, and this accounts for £25,000 of the £150,000 initial investment. Barclays Bank has arranged a start-up loan for the company, and the rest of the money has come from private investors and the two directors.

The first peripheral products, including a light pen, a sound synthesiser (using National Semiconductor's speech synthesis chip), and an infra-red operating keyboard, should be available by the middle of next month.

Borland, who will be based in London, intends to set up a dealer network in the UK and eventually in Europe.

BORLAND . . . His existing company, Product Launch, will market the new factory's products.

Telecomputing offers 'freedom from all that jabberwocky'

by David Craver

LIBERATION from the "jabberwocky world of computer programming" is what Telecomputing is promising users of its new information retrieval system, TPS-access.

Designed for non-data processing staff who have access to computer terminals, the system provides users with the ability to make ad hoc demands on the database without requiring the DP department to write a special routine.

TPS-access can be installed as a freestanding package or as an option to Telecomputing's TPS transaction processing monitor. Both are compatible only with ICL hardware, although a spokesman pointed out that the programming language is not manufacturer oriented, and "one day" will be adapted for other equipment.

The new system works by presenting a series of tables on the display screen which are filled in according to what subjects the user wishes to access. The user has to know neither where the data is located nor how it is formatted, and data can be retrieved, updated, manipulated and used for calculations.

The DP department, at the initial installation of the TPS-access software, defines what data can be accessed by particular staff, sets up a dictionary file with a description of files and fields on disc, and generally outlines the framework for the operation of the system. Telecomputing estimates that this one time task would take no more than a man week to accomplish.

Telecomputing says it has over 400 TPS users worldwide with about half of them in the UK, and that UK orders for the system are "rolling in" at about three or four a month.

NEWS BRIEF

Job for the liquidator

THE man who negotiated the sale of the failed conference and training company Infotech to Pergamon Press has joined the Robert Maxwell company. Peter Mason was appointed liquidator, and prepared a report on Infotech for its creditors which so impressed his new employer that he was offered a job.

After the sale, Mason came under criticism from rival bidders for accepting Pergamon's offer of £135,000, twice Infotech's tangible assets. He rebuffed criticism by saying that only Maxwell had put his money on the table.

Digital switching

A DIGITAL voice and data switching system capable of handling up to 20,000 telephones and terminals including text, graphics and facsimile has been announced in the US by Datapoint. The system, called the ISX information switching exchange, will interface to Datapoint's ARC coaxial cable based local network. It has already won 12 orders and letters of intent valued at $11 million.

Atomic power link

EMULATION of ICL 7502 and IBM 3270 interactive terminals is to be handled by dual MDS Series 21/20 distributed processing systems ordered by the UK Atomic Energy Authority. The 21/20s will communicate with an ICL 2900 mainframe system at the UKAEA's establishment at Winfrith, Dorset, and with an IBM 3033 at Harwell.

Second source

MOTOROLA is to second source National Semiconductor's magnetic bubble memory devices in an agreement which involves a full design database including basic device architecture and test procedures. Initial devices include a 256K-bit and 1-megabit bubble memory and their controllers. Motorola previously second sourced Rockwell's bubble memory devices, until the latter opted out of further investment in the area.

Stake in Diktat

THE size of Pilkington's investment in Manchester-based Diktat, the word processing distrubutor and bureau, has now been agreed at £220,000 for a 19% stake in the company. John Pollard and his partners started the firm in 1978 with only £3,500. As part of the Pilkington deal Diktat is moving to St Helen's and expects to create 60 jobs in that area.

RIPPINER with Tektronix new graphics display direct-view storage tube.

'Dying breed' gets new life

by David Craver

THE pioneers of the direct-view storage tube for graphic display terminals have introduced a new series which will give "lots of life to what some said was a dying breed," according to Jon Reed, vice-president of Tektronix's Information Display Division.

Tektronix is the leading manufacturer of computer graphics displays, with an estimated 40% of the European market, Reed said. While business graphics is probably the fastest growing segment, he went on, Tektronix will continue to concentrate on scientific and engineering applications.

Highlights of the two new models in the 4110 series are the addition of local intelligence on the terminals to reduce dependence on the host computer, enhanced communications speed with the host, and increased local storage capacity, with RAM memory expandable to 600K or 800K-bytes, and a single or dual 512K-byte floppy disc unit.

Both the new products, the 4112 raster display terminal and the 4114 direct-view storage tube with refresh capabilities, will be compatible with the original 4010 series, which will remain in production. The 4010 was "running out of steam for some customers," admitted Howard Rippiner, UK product manager, but he still believes it will apply in many areas.

The Tektronix graphic terminals are compatible with most major mainframes, with the notable exception of IBM, and Reed said "something has to be done about that soon." The company expects to stay in the general purpose market, rather than higher value specialised systems, and its new units will range from £10,000 to £20,000 for the 4114 and from £6,000 to £10,000 for the 4112.

Large unit sales to companies like British Aerospace, British Leyland, and Rolls Royce will, Reed added, continue to account for the bulk of the business.

UK sees distributed process control

A DISTRIBUTED digital control system for the process industry is being introduced by a UK company which has bought itself out of its US parent. Skil Controls of Lancashire has launched a microprocessor-based distributed system which is seen as a replacement for the centralised method of control currently in use in the UK.

The product, the DCS 1000, is made up of one or more supervisory units which can act as either a standalone microcomputer or as a communications link to a host plant computer. Each of the units can direct up to 100 local intelligent modules which are located at, and monitor, the process.

The supervisory micro is programmed to poll all the modules connected to it on a repetitive basis.

The product was developed by Robertshaw Controls, the California manfacturer of industrial control systems. Although new to Europe, distributed control systems are established in the US.

Skil Control, which will market and service the product in the UK, recently bought itself out from Robertshaw.

At least one distributed process control system is working in the UK, and it is not a Skil control product: American Can's new plant in Runcorn, Cheshire has two production lines running with a DEC host computer each, along with a combination of Intel 8080 and 8085s handling the process control on the lines.

GORDON . . . "Into the mainstream."

CAP product in CA range

THE first of the five software products that Computer Associates recently acquired from CAP-CPP has been integrated into CA's Dynam series.

Managing director Harry Gordon said all the CAP-CPP products would be "brought into the mainstream of our product line." CA is currently working on the other four, and announcements will be made as they are ready.

The new release is the Dynam/DMF dataspace management system, which was formerly Improve/Data Space. The product was substantially modified, with enhancements to support IBM's VSAM system software, and it now uses the same central repository for files, CA-Catalog, as CA's tape management product.

Dynam/DMF will also include support for MVS/SP, OS/VS1, and the new IBM 2375 and 3380 disc drives, "if and when they arrive," Gordon said. The report writer has been changed to use CA's SRAM instead of attaching sort.

Pregnant VDU ops to get extended leave

by Hesh Wiener

PREGNANT operators who work for Bell Canada have negotiated through their union the right to take extended leave.

The agreement was not the result of any hard evidence that VDUs are a hazard, but rather because of the lack of any conclusive research proving that they are safe.

A Bell Canada spokesman commented, "We believe there is no health hazard, but we realised that pregnant women may be concerned with the potential risks of working with VDUs."

The agreement followed the refusal by four Bell operators to work behind display terminals following the onset of their pregnancies. Their stand was largely a result of a widely publicised incident at the Toronto Star, where four employees who gave birth to deformed babies had worked with VDUs.

In both cases the VDUs involved were judged safe by the Ontario Ministry of Labour, but the absence of a definitive study means that many women continue to have doubts.

Another ten Bell Canada operators have since opted to sit out their pregnancies, away from the terminals.

The union which negotiated the agreement, the Communication Workers of Canada, did not claim to have any information on terminal-emitted radiation and its effect on pregnant women.

User club's confidence in ICL

by Kevin Cahill

ICL 2900 Users Club met last week to discuss telecommunications developments — and conspicuously avoided any public mention of ICL's current difficulties.

The theme of the meeting, heavily emphasised by the speakers, many of whom came from companies such as Computel with high investments in ICL equipment, was that the club had confidence in ICL's future.

There was a formal announcement that the club would address itself to ICL's current difficulties — but not until its next meeting in October.

Third Cambridge Ring product launched

by Donald Kennett

A THIRD commercial implementation of the Cambridge Ring local area network has been launched by Scientific and Electronic Enterprises, SEEL, of Livingston, West Lothian, under the name of Transring 2000.

Current versions are based on Eurocard-sized circuit boards designed by SEEL and using MSI chips, but the company plans to use the Ferranti ULA two-chip implementation when it becomes available, as do Orbis and Logica, the first two companies to launch production versions of the Cambridge Ring.

Transring systems are running at SEEL's offices and at the Edinburgh Regional Computing Centre which has collaborated with SEEL on product development, as well as at Hatfield Polytechnic and a group of southern universities.

The main modules for the system — the monitor station, repeater and access logic — cost between £450 and £500, and a range of other modules are available including interfaces for the S-100 bus used in many micros and the Q-Bus and Unibus used in Digital Equipment's LSI-11 and PDP-11 processor ranges.

Direct memory access interfaces for the Q-Bus and Unibus are planned for later this year and a terminal concentrator is also under development.

The Transring operates at 10Mbps, giving an effective user data rate of 3Mbps.

COMPANY NEWS

by Kevin Cahill

Strong gains in US Fortune Five Hundred list

Wang in top ten for returns to investor

THE Fortune Five Hundred list of top American companies for 1980 shows computer companies making strong position gains. Only at the top, where IBM held on to its No. 8 position in terms of sales, is there relatively little movement.

Top of the list was Exxon with gross sales of $103,142,834,000. IBM made the No. 8 slot with sales of $26,483,000 million, showing the huge gap between the oil giant and the biggest computer company in the world.

Raytheon moved up from 90th position to No. 69 with sales of just over $5 billion.

Honeywell moved eight places up the table from 79 to 71, and Sperry made a 12-slot jump from the 104th position to 92.

Burroughs, almost alone among the computer companies on the list, fell from 118th position to 137, despite the fact that the corporation over ten years has the best record in the US in terms of cash dividend growth. Burroughs has shown compound annual growth in terms of cash paid on its shares of $26.6% between 1971 and 1980.

Control Data made a hefty 18-position jump to take up position 141, and Digital Equipment did slightly better, making the No. 162 slot from 187 position.

In the sub-billion dollar list which begins at No. 302, Intel jumped 32 places to make the 336th position, while Memorex, which posted a loss of $28 million in 1980 and made the Fortune list of the biggest money losers in America, showed a drop from last year's 346 slot to this year's 358.

Competition in the last 100 positions was much tougher, but Data General jumped from 1979's 441 to 1980's 409, which makes it one of the faster climbers in the league.

Storage Technology showed a 23-place move to make it No. 433.

Wang Laboratories showed the most spectacular growth, coming from outside the list to make the No. 457 position. From a 1979 non-list calculation of a 576 ranking, this shows Wang growing faster than over 100 companies, and Fortune also shows Wang as the third best performer in the whole of the US in terms of total returns to investors.

Wang was the only computer company to make a position in the ten best returns to investor in 1980, and the company showed a total return to investors of 156.8%, more than 100% better than the computer and electronic industry median return of 36.07%.

Wang also made the top ten companies in terms of changes in sale, with a 68.9% increase between 1979 and 1980.

*The Fortune 500 list appears in Fortune magazine, which is published fortnightly by Time-Life Inc.

DEC set to break $3bn barrier

DIGITAL Equipment has steamed ahead in the first quarter of 1981 with net profits up 50% to just over $100 million on sales of $843 million.

Sales in the comparable quarter of 1980 were $627 million.

DEC appears to have avoided the softening in order books and slowing of growth experienced by other companies and now looks set to break the $3 billion barrier.

Over the nine months of the company's current financial year, sales are reported at $2.26 billion against $1.67 billion in the first nine months of the previous year.

BASF turnover up £10 million on year

BASF the German-based chemicals giant, has announced turnover of £87 million for the company's data processing divisions worldwide. This is £10 million better than the previous year, and reflects the company's drive to diversify away from its traditional magnetic media base in the computer industry.

Last year, the company launched into the mainframe market with the Series 7 computer line, a machine which is basically the Hitachi M Series.

BASF added the Hitachi machine to the range to complement the 7100 series small business computer, which has been available for some time.

The company does not reveal profit figures for its divisions, but UK managing director Nick Hollis said that sales in the UK had outperformed those of other BASF data processing divisions, despite the recession.

Hollis claimed that despite all-round improvement in the sale of the company's traditional magnetic media products and plug-compatible peripherals, the main improvement came in OEM sales.

Worldwide sales of OEM kit were now running at over £18 million, and in the UK the company had doubled its turnover in OEM kit.

Scandinavian robotics merger

THE robotics market in Scandinavia will shortly receive a shot in the arm with the merger of the Electrolux and ASEA groups' interest.

ASEA, which is primarily an electrical engineering company, and Electrolux, best known for its domestic appliances, are both owned by the same parent, essentially the Skondanaviska Enskilda Bank, but both companies have produced robots independently, and Electrolux has sold over 400 of its design. ASEA which runs its robotics production as a separate company, is budgeted to sell over £20 million worth of machines in the coming year. The combining of the two businesses is thought to indicate a decision by the parent company to create a Scandinavian robotics group which it is believed could compete directly with the Japanese and American markets in the late Eighties.

Million dollar drop in IBM Aust. profits

DESPITE the fierce competition being generated in the Australian computer market by the presence of Fujitsu's Facom subsidiary, IBM Australia marked up 1980 sales revenue increases of 18%. Sales for 1980 were A$261.7 million against A$222.2 million in 1979.

IBM Australia, the biggest computer company in Australia, showed a slight drop in profits from just over A$19 million in 1979, to just under A$18 million in 1980. The company says the drop was due to a switch in accounting policy relating to the period over which rented equipment is depreciated.

IBM Australia has switched from a straight line 25% a year depreciation over four years to a five-year depreciation with 33.3% of the depreciation being taken in the first year.

The change resulted in a A$3.8 million charge against profits after tax and the company claimed that without this charge profits would have shown a 14% improvement.

Despite the difficulties, news from the company is that demand in Australia is still strong and the order backlog is the biggest the company has had.

Many commentators feel that Fujitsu, which is alleged to be undercutting IBM by up to one-third in the bigger end of the range, is using Australia as a test market.

CW SHARES TABLE

Date [illegible]

Index 161.24 Change +2.78

Pence 1981 High	Pence 1981 Low	London Stock Exchange Stock	Pence Price	Pence Chge
[illegible]	[illegible]	A Comp Tech (25p)	[illegible]	[illegible]
[illegible]	[illegible]	BOC Int (25p)	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Chubb (20p)	[illegible]	[illegible]
[illegible]	[illegible]	Cole (R H) (25p)	[illegible]	[illegible]
[illegible]	[illegible]	De La Rue (25p)	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Ferranti (50p)	[illegible]	[illegible]
[illegible]	[illegible]	GEC (25p)	[illegible]	[illegible]
[illegible]	[illegible]	ICL (25p)	[illegible]	[illegible]
[illegible]	[illegible]	Kalamazoo (10p)	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Muirhead (25p)	[illegible]	[illegible]
[illegible]	[illegible]	Office & Elect (25p)	[illegible]	[illegible]
[illegible]	[illegible]	Philips Lamp (f1 10)	[illegible]	[illegible]
[illegible]	[illegible]	Plessey (50p)	[illegible]	[illegible]
[illegible]	[illegible]	Racal Elect (25p)	[illegible]	[illegible]
[illegible]	[illegible]	Rediffusion (25p)	[illegible]	[illegible]
[illegible]	[illegible]	Thorn EMI (25p)	[illegible]	[illegible]
		OTHER MARKETS*		
[illegible]	[illegible]	Comp & Systems (5p)	[illegible]	[illegible]
[illegible]	[illegible]	[illegible] (£1)	[illegible]	[illegible]
[illegible]	[illegible]	Quest Auto (10p)	[illegible]	[illegible]
[illegible]	[illegible]	Rolfe & Nolan (10p)	[illegible]	[illegible]
[illegible]	[illegible]	Scan-Data (10p)	[illegible]	[illegible]
$		US Stocks	$	
[illegible]	[illegible]	Amdahl	[illegible]	[illegible]
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[illegible]	[illegible]	Comp Automation	[illegible]	[illegible]

$ 1981 High	$ 1981 Low	US Stocks Stock	$ Price	$ Chge
[illegible]	[illegible]	Comp Sciences	[illegible]	[illegible]
[illegible]	[illegible]	Comshare	[illegible]	[illegible]
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[illegible]	[illegible]	Dataproducts	[illegible]	[illegible]
[illegible]	[illegible]	Digital Equipment	[illegible]	[illegible]
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[illegible]	[illegible]	MDS (Mohawk Data)	[illegible]	[illegible]
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[illegible]	[illegible]	NCR	[illegible]	[illegible]
[illegible]	[illegible]	Perkin Elmer	[illegible]	[illegible]
[illegible]	[illegible]	Prime	[illegible]	[illegible]
[illegible]	[illegible]	Raytheon	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Sperry Corp	[illegible]	[illegible]
[illegible]	[illegible]	Storage Tech	[illegible]	[illegible]
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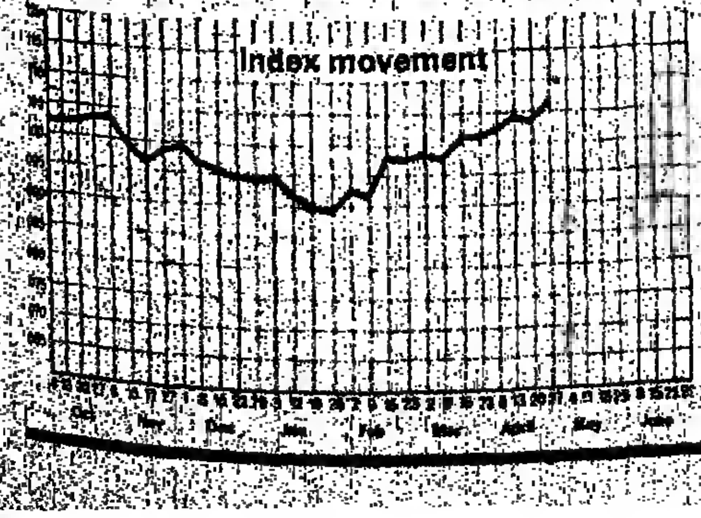
[illegible]	[illegible]	Texas Instruments	[illegible]	[illegible]
[illegible]	[illegible]	Tymshare	[illegible]	[illegible]
[illegible]	[illegible]	Wang Lab B	[illegible]	[illegible]
[illegible]	[illegible]	Wyly	[illegible]	[illegible]

The table shows the closing prices in America on Thursday and the mid-day prices on Friday for London. The shares index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.

** Shares traded under the Unlisted Securities Market or under Rule 163(2)(a).*



MICRO NEWS

by Eileen Stainer

Commodore UK prepares for expanding product line

UNDER its new general manager Bob Gleadow, Commodore UK is undergoing an internal restructure and expansion to cope with the fast growing product line emerging from Commodore International.

Three major products have been introduced within a year: the SuperPet, the Vic and the micromainframe, and Gleadow comments: "We want to see the market expanded; we believe it has to expand."

The internal restructure involves the formation of four divisions, one of which will represent the company's move into the cash register market, as announced last November. Another will be set up in September for communications.

The other divisions will concentrate on the Pet, the Vic and associated products, the new micromainframe system announced at Hanover last month, plus a future product which will probably be a 16-bit system.

Gleadow sees Commodore UK taking more of the important decisions from the international company and getting more involved in development work on new products. This will apply especially from June onwards when 80% of the products for Europe will be manufactured in Germany rather than in the US.

On the software side, Gleadow hopes that Commodore UK will be taking more of its products to the worldwide marketplace. "We are starting to market our products aggressively now, instead of just selling them as we used to," he told Computer Weekly.

The expansion involves the hiring of more staff – for example, John Baxter has just taken up the post of marketing manager – as well as the physical occupation of more office space. The company has just bought an extra 8,000 square feet next to its existing premises in Slough.

The launch of the dual 8-bit processor system called the micromainframe at Hanover this year was described by ex-general manager Kit Spencer as a "quantum leap". Now, says Gleadow, the next quantum leap is under development and could be launched at the Pet Show in June, but he refuses to elaborate.

One can safely assume this to be a 16-bit microprocessor based system, especially as Commodore's closest competitor in the UK, Apple, is expected to release such a system by the end of the year. It will be interesting to see which particular 16-bit device Commodore chooses. Apple is believed to have picked Motorola's 68000, which at the end of last year was said to have captured 44% of the market, 4% more than Intel's 8086.

Apple is also said to be developing a competitor for the Vic 20 colour computer which should be available in the UK next month. Like the Vic, it will be priced under £200, but is not expected to be released until the end of the year.

Commodore is aiming the Vic at the home and education market, where the company admits it will overlap with the Pet. However, the Vic is cheaper than the Pet, has better colour graphics, and a higher resolution capability.

The Vic was launched last November in Japan where Commodore claims to be top in the personal computer market and sales of the Vic are expected to reach 100,000 in the first year. In the UK, the company claims to have 60%-70% of the market, selling about 2,000 Pets a month.

Commodore's closest competitor in the UK, Apple Computers, claims to be selling about 1,500 Apple IIs a month.

Sales of the Vic are expected to be high. "We hope to sell more Vics by Christmas than we have sold Pets in the last three years," said John Baxter. In August the system is going out to the high street stores ready for the Christmas rush, but it will be available from all Pet dealers from next month.

The internal restructure at Commodore UK puts the new line-up (left to right): Keith Hall, sales manager for the Pet, Bob Gleadow (who replaces Kit Spencer as general manager), and John Baxter the new marketing manager.

Four main applications for the Vic include teaching computing and how to program in Basic, education for children, teaching how to type, and administrative use in business. It can also play all the usual electronic games when connected up to a home television set.

The keyboard has four programmable keys for storing instructions and characters and the user memory is expandable from 5K-bytes to 32K-bytes with the RAM-PACK add-on module. A special interface for a modem link to telephone will be available so that Prestel and Oracle can be used with the Vic. Printer and floppy disc drive will also be available if needed.

Next on the schedule for the Vic is a plan for networking using several Vics with one central Vic or Pet. Commodore should be releasing something along these lines by the end of the year, just before the launch of the upgraded Vic 20, the Vic 40, which as its name suggests uses a 40-column screen.

Commodore is also working on a portable version of the Vic using CMOS devices and LCD displays.

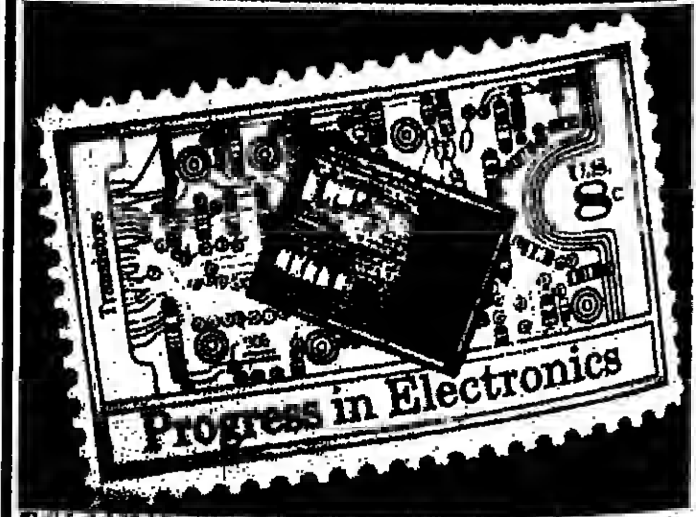
New version of AIM65

AN enhanced version of Rockwell's AIM 65 single board microcomputer, the AIM 65/40, was launched at the All Electronics Show in London last week. The new system still uses the 6502 eight-bit microprocessor from MOS Technology, making the two systems fully compatible.

The 65/40 has 65K of on-board memory and selectable PROM, ROM and RAM configurations. Dynamic RAM is expandable on the main module, from 16 to 48K-bytes and 32K-bytes of ROM/PROM are supplied: 12K for the monitor and text editor firmware, and up to 20K-bytes for applications software.

The system comes with an on-board thermal printer, a full size 65-character keyboard, and a 40-character display. Up to two cassette recorders can be used for storage of user generated programs. There is also the facility for a teleprinter and a modem via an RS232C interface.

Software languages available to run on the 65/40 include Basic, and AIM 65 Forth, which features reverse Polish notation. PL65 and a form of Pascal called Instant Pascal will be available later this year.



Bell Labs' 32-bit microprocessor.

32-bit chip from Bell

DEVELOPMENT of a 32-bit microprocessor for use in commercial products and services is due to be completed by Bell Laboratories later this year. A version which has already been completed uses 100,000 transistors and has been fabricated using CMOS technology.

The Bell MAC-32 as the device is called, was designed and built by a team of engineers at Bell's microsystem design, CMOS integrated circuit design, and IC process development and testing departments. Computer aided design techniques were used to create prototypes.

This makes Bell the third company to have announced development of a 32-bit processor, but like Hewlett-Packard's device it will not be commercially available. Intel is still the only company to have announced such a device, the iAPX432, for the commercial market.

Software for Sharp system

SOFTWARE packages for Sharp's business system, the PC3201, are now available from Sharp UK in Manchester, and from the developer, Triumette Computer Services of Fleet in Hampshire.

The initial software includes a fully integrated accounting package which comprises a sales ledger, a purchase ledger and a nominal ledger system together with invoicing. A stock control system is under development.

Current packages operate on the balance forward system, but these will be converted to "open item" accounting when Sharp introduces a 48K memory expansion board to increase total memory capacity.

With this addition, the invoicing system will be able to handle up to 2,000 products and the nominal ledger 2,000 transactions. All current and future packages will be easily upgradable to eight-inch discs.

SYSTEMS THOUGHTS

The battle for jobs as new technology changes our lives

Marilyn Kennedy-McGregor is the second contributor to Systems Thoughts, a fortnightly column aimed primarily at systems analysts. She lectures in systems analysis as part of the City University business systems analysis team. Prior to that she worked for IBM and became involved in the role of data processing in business. Her particular interest is in the problems of information handling and the efforts of technology on organisations, and she has presented papers in the UK and Europe.

Like her fellow contributors, she welcomes reader reaction – for publication or not. Letters should be addressed via the Editor.

Marilyn Kennedy-McGregor

NEW technology is changing the lives of systems analysts, programmers, operators and other DP-related staff in many ways other than those which are immediately apparent.

It is not only a question of learning the willing suspension of disbelief when faced with micro-technology, which claims to be able to perform an enormous variety of computing tasks at a ridiculously low cost. It is the realisation that computing capacity is moving out of the exclusive control of the DP department and into the general office at both managerial and secretarial level.

It is also the impact, which is bound to be an increasing one, of new technology agreements.

No longer is it merely a case of involving trade union representatives as early as the feasibility stage – although even that, for many companies, is a step into the unknown. Unions are now requiring to be consulted fully not only in the actual implementation of new applications but also in the initial conceptual stage.

New technology is no longer the preserve of R&D; it is in the arena of industrial relations, and systems analysts and designers who have never needed to concern themselves with such matters now find that they have no choice.

Those of us who entered the computing world in the late Sixties will remember that one of the great selling points of computers was the staff savings that could be achieved in certain applications: no longer. Draft technology agreements everywhere – in Ford, the Open University, Plessey, and the Civil Service – have as one of their main articles that "there shall be no redundancy (ie dismissals) as a result of introducing computers." (Ford).

The Civil Service National Whitley Council draft agreement goes even further: "As a pre-condition for the introduction of new technology in the Civil Service, it is agreed that existing job levels and working conditions shall be fully protected and that all staff in the Civil Service shall share equally in the benefits accruing from the new technology by way of an immediate agreement to a reduction in working hours."

It is, however, true that some of these agreements have been modified in their actual operation.

New technology is taken to mean not only the introduction of totally new equipment but also the modernisation of existing machinery. It applies as well to software as to hardware, and so it impinges on new applications, using existing hardware.

Very few analysts yet appear to have grasped the full implications of this for their everyday work.

Of course, new technology embraces far more than just conventional minis, micros and mainframes, and one of the major growth areas is in word processing. In the past computers have been used to mechanise standard clerical procedures such as invoicing and the production of standard letters, but where this has occurred the whole application has been removed from clerical staff and handed to DP staff.

Now word processors are constantly reaching new levels of sophistication, with operators using them both as intelligent typewriters and as calculators simultaneously. A secretary can type out an invoice, using the word processor to calculate the amounts as she goes. Admittedly at present the mechanism for doing this is in many cases very clumsy, but it is improving quickly with the pressure of competition.

Typists using word processors are unlikely to have come into contact with computers before; they think of the machine not as a computer but simply as a means of doing their job better and more easily. A Civil Service report on a word processing project notes: "The traditional assumption that typing duties are more appropriate to women is quite likely to be unseated."

In the area of word processing, new technology agreements are attempting to improve the quality of life of the operators. There are stringent health regulations built into many of them. The agreement at NEI Parsons, for example, specifies six-monthly eyesight checks on VDU operators. It also required a break from the screen of 20 minutes after each hour.

A number of agreements are specifically technical in their requirements: a refresh rate of 57 Hertz (NEI Parsons); of 60 Hertz (Plessey); and of 50 Hertz (Vickers). They also mention dot matrices, levels of humidity and noise, the type of chairs to be used, storage space and a level of detail that would astonish and delight anyone used to working conditions to be found in many computer installations.

Some agreements also specifically outlaw certain applications: work performance, for example, may not be measured by computer systems. Many agreements not only mention training for new technology but give details as to what that training shall include.

So far, although the technology agreements have sought to be as far-reaching as possible, they have tended inevitably to concentrate on straight computing and word processing. When more computerised switchboards are available, when more messages are transmitted via electronic mail, when "intelligent" photocopiers become the norm – what will technology agreements look like then?

All that is clear is that they will play an increasingly large part in the constraints imposed on systems analysts.

Marilyn Kennedy-McGregor

FOCUS

Belt tightening for the year of DP productivity

THIS year has already been designated the year of productivity. Achieving more workflow for less cashflow seems to the general aim of the exercise for both supplier and user.

Unfortunately the message does not seem to have reached all areas of the industry. Just try getting your hands on the new IBM 3080 series before 1983, your new installation telephone or telecom kit this year, or an urgently required software specialist ever.

No less a figure than the new Minister for Information, Kenneth Baker, is rallying to the productivity cause – even if his major contribution appears to be shovelling out vast quantities of public money in a glorious attempt to turn the UK into a wide-area Silicon Valley.

Productivity, and the need to maintain it, is probably a major reason for the general lack of response to recent courses and seminars, the State of the Installation having precedence over the State of the Industry.

DP management are currently experiencing the delights of belt tightening, budget trimming and cost cutting. The installation shop is being destocked, with stationery and media supplies held at lower levels and more attention paid to enhancing existing software than embarking on new applications.

Productivity does not always mean producing ever more in ever shorter timescales. Often, in order to increase throughput a practical evaluation of what is already in the computer pipeline has to take place. Those weekly stock level reports could well go monthly or be produced in abbreviated format showing only significant trends. The users involved would probably appreciate a partial stemming of the flow of paper.

No greater service can be promoted by DP management than that of encouraging better use of the computer system. If necessary, greater flexibility and responsibility should be given to the operating team. Following the firm lines of the installation rule book, for example, and aborting job runs automatically after three attempts should be more a matter of judgment and experience.

To achieve these desirable aims, more installation emphasis must be put on operator training. Funds should be found to allow the ops team to become more efficient in terms both of machine and system understanding. One operator in the team with a basic understanding of programming could be more productive than a faster line-printer, larger capacity disc drive or even additional memory.

Even the banks, seldom noted in the past for containing costs, are getting the productivity message. They are now turning their customers into computer keyboard operators. The latest banking terminals revealed by Phillips give the user a whole series of options including that of a PIN number. In this case however, the PIN in question does not refer to additional housekeeping money but a more basic Personal Identification Number.

Without this number, apparently, user friendly systems are not that friendly – or productive.

Alan Simpson

10 YEARS AGO

From Computer Weekly of April 29, 1971 . . .

IN a move to ensure that their customers remain true to the 1900 range, ICL has announced a package of new hardware and software developments which substantially enhance the performance of the range and which hopefully will prolong its life until the new ICL range, code-named Project 52, is ready . . . Ferranti is to extend its activities in the control field, entering the market for small data collection and control systems costing up to £100,000 . . . ICL and Honeywell have both received the Queen's Awards to Industry for 1971 in recognition of their export achievements . . . Basil de Ferranti has left his job as an executive director of ICL at his own request, but will remain on the ICL board . . . The merger of Software Sciences Ltd with its sister company GPS Sciences Ltd has been announced by SSL. . . . Computer Field Maintenance is to set up service centres in Frankfurt, Munich, Stuttgart, Dusseldorf and Homburg . . . The Department of Health has awarded King's College Hospital a grant of £150,000 to be spent on hardware.

DOWNTIME

Youth has its fling

The future for Spacefleet looks good; from all the future Dan Dare at the Space Invaders competition. Our generation, however, did "incredibly badly"

"WE ought to have had a special category for the old timers," commented the exhausted organiser of the Space Invaders competition held by Ingersoll Electronics at the Piccadilly Hotel, London. "I mean for those over 21."

Youth definitely had its fling. It had been decided to have a junior group for those 13 and under, and then an 11-year-old showed everybody up by winning the whole contest. This intrepid youth, Stephen Bradley, wins a trip for two to the States, to visit Disneyland and play more Space Invaders.

The other frustration of Ingersoll's Pip Errington was that the contestants were too good, and kept getting maximum scores. She frantically upgraded the levels of the games on the Atari TV adapters, leading to versions with invisible and zigzagging bombs, and no shields. Finally she produced a hot new cartridge from America, but "they were terribly good at that ton," she moaned.

The contestants were all members of the Atari Owners Club. Space limitations had kept the number of entrants down to 350, each playing three rounds in a group with 40 others over a period of 3½ days. The last day consisted of a knock-out competition to find the overall winners.

Sadly for Errington, the contestants were far from knocked out and are now clamouring for an announcement of when the next contest will be. (When she has recovered, is the answer.)

Apparently these youths practise on average two hours a day. No wonder there is an MP calling for legislation. What this legislation would consist of I can't imagine, but it conjures up visions of speakeasy Space Invaders parlours. You approach the camouflaged basement, sound-proofed to contain the cacophony of beeping, and whisper through the window, "Flash Gordon sent me."

Anyway, the Principal of Trowbridge Technical College is threatening to put a curfew on the machines to get the students to do some work. Personally, I can't see the point of practising anything for two hours a day. For me, I've found a nice old-fashioned Moon Landing game in a pub near me which requires a steady hand and no analytical mind.

Besides, I've figured out how to win on it.

So who needs protection?

HERE'S a puzzler for the civil liberties people. A South African policeman who had joined the staff of the University of Cape Town as an undercover agent to root out sedition has been exposed by a computer file. His routine application to join the university pension fund was fed into a computer which also happened to handle the police pension fund, and the fastidious machine blew the whistle when it noticed he was already in there.

But how to react to this? The man's privacy has clearly been grossly invaded, all the sacred principles about the use to which data may be put have been violated. But on the other hand, should South African fuzz be granted any civil liberties at all? Since a spy is by definition engaged in invading other people's privacy, can he have any of his own?

Certainly much of the concern to do with privacy is over protecting the guilty rather than the innocent. If one is a follower of the NCCL there can't be many people more guilty than South African policemen, so surely one should be concerned about protecting them?

Anyway, the Cape Town students held a mass rally to protest (that the cop was there, not that he was rumbled). Clearly students must be able to get on with their subversion without being subverted themselves.

Maybe if we ever get data protection legislation in this country there should be a list of people whose privacy it is all right to invade: CIA agents, property developers, Tory politicians. This would be extended later to include criminals, wife swappers, and Manchester United supporters.

Then it might be simpler to include the whole human race!

When jargon makes life easier . . .

IN the best tradition of British generalists, The Times despatched its cultivated New York correspondent Michael Leapman to cover the ups and downs of the Space Shuttle. This gave the Top People a chance to share his bafflement over the technology, the presence of which appeared to come as a surprise. Be that as it may, Leapman presented an interesting insight into the computer fault which caused the main holdup.

"Blame was placed on a computer which failed to communicate properly with four other computers," Leapman wrote. "The official explanation was a fault of timing but I suspect it was a question of language. The language of technology, which was, after all, invented to make life easier for computers, may have been so abused by its creators that it now blows the mind of those whose very need it was supposed to serve."

I have long championed the cause of making life easier for computers, and it is upsetting that Leapman has blown the cover off our scheme to destroy the English language so as to clear the way for computers to take over. What he did not twig was how the jargon actually does make things easier for the machines.

When a NASA man says a tank is "in a replenished mode" instead of "full", he is simply using a string of characters that fits efficiently into a disc sector.

The great day when we all start talking in hexadecimal is, I fear, still some way off, so you can hardly blame the NASA computers for getting a little impatient.

Chad

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, April 30, 1981

Exciting times at the BBC

TELEVISION is almost as good as computing for inviting controversy, so putting the two together was bound to lead to a good old fuss. There just may, however, be a little more to the idea of an Acorn-produced BBC micro than some of the Cambridge company's critics have allowed.

When specifications agreed by the BBC and Acorn were revealed last week, they showed that the computer being planned will be a dual 8/16-bit machine built round a 16-bit microprocessor. As such it will be capable of expansion to give a performance closer to that of a minicomputer than the £200 micro which was envisaged.

Any commitment to a 16-bit microprocessor is highly significant for a mainframe manufacturer, let alone a microcomputer maker. So far, only companies like IBM, Burroughs, and Sperry Univac have made their move.

The international tally reads something like: Intel's 8086 selected by IBM, Burroughs and Nexus; Zilog's Z8000 chosen by Sperry Univac and Olivetti; and Motorola's 68000 picked by NCR. National Semiconductor's new 16000 is still fresh to the market.

Acorn is making its decision between Motorola and National Semiconductor. The former must be favourite, for it has picked up a string of second source manufacturers and over the last six months has made such inroads into Intel's market share that it looks set to become the industry standard.

This is a different league from the harmless but useful 8-bit computer which Acorn had been expected to offer.

Just which partner in the television series is behind its ambitious move is not clear. Both insist that the specification was a joint one. And the BBC, when tackled, said it is offering the opportunity for an almost unlimited learning capacity for those interested in computers to avoid frustrating viewers by imposing hardware restrictions for the later stages of their learning curves.

* * *

This does not square with the thinking of the producer of the proposed television programmes, who only a few weeks ago said he regarded the micro as "an optional extra".

"I don't want people expecting a series telling them how to use a microcomputer," he said.

Viewers will certainly need some such thing if they are to get anywhere near using the power of the 16-bit computer they are expected to acquire in large numbers. Those who are capable of operating it as soon as they get it are unlikely to need a populist television series which, as another part of its producer's declared aims, is "introducing computer concepts, most of which have been implemented on mainframes".

Perhaps the BBC has a series of programmes planned, though it has not said so.

Anyway, the benefits to Acorn are clear, and it seems reasonable to assume that this enterprising company was the force behind the ambitious adoption of processor.

The company is making the most of its new found recognition by the BBC (and the government's micros in education scheme) to create a major market presence.

With an exploding market for microcomputers worldwide, and ominous noises from the Japanese (not to mention IBM), the British computer sector should welcome that. So far the only force gearing up to take on foreign manufacturers on their international scale is Clive Sinclair.

He was among the loudest of complainants at the choice of Acorn by the BBC – and again after its selection by education scheme officials. There is room in the market for both of them. Whatever the rationale of the BBC's curious decision in television programme terms, there is an exciting opportunity being grasped by Acorn. We in the computer business should only applaud.

1984 and all that . . .

THIS week's example of the strange things people say in the media about computers was sent in by Mike Coot, of Lesco Software, who wins £5.

As [illegible] controllers began ensuring that everything was ready to shoot astronauts John Young, 50, and Robert Crippen, 44, into space on America's first manned mission since 1975, one of the craft's five computers failed.

These identical high-technology machines, each capable of 300-400 [illegible], are as necessary to the craft as the crew . . . The computers are designed to "talk and argue with each other like humans."

Daily Telegraph

LETTERS

Keep arbitration simple

BRYAN NIBLETT rightly drew attention (CW, April 16) to the benefits of arbitration in the settlement of computer disputes. In practice these benefits are often not obtained because the essential simplicity of arbitration is lost. We all know the industry motto on the idiocy of not keeping things simple.

When a dispute arises the parties are soon seeking legal advice from their solicitors. If there is no agreement then the matter leads to a court case or an arbitration. For a court case the procedures are laid down. For an arbitration there is virtually no laid-down procedure. So the legal profession tends to follow court procedure in an arbitration. This is unfortunate, as simplicity is thereby lost. The lawyers are not to be blamed; they have a case to win and could be criticised for doing less than their utmost.

Arbitrators also share some of the responsibility for following court procedures. I heard one arbitrator say: "I like arguments to be put by those used to putting arguments" – that is, lawyers. As most disputes hang on the facts rather than the law, a computer arbitrator should be willing as well as able to get to the bottom of the matter without the help of the careful presentation of a lawyer. An arbitrator may, but following court practice often does not, ask direct questions of the witnesses.

Arbitration should be looked on as a speedy way of settling disputes that has the backing of legal enforcement. The benefits of arbitration arise because it is different from a court case. Those benefits can easily be lost if arbitration is built up to be a copy of a court hearing.

A copy can never be as good as an original.

CLIFF DILLOWAY
Data Processing Consultant
Stroud, Glos.

Manpower grants

YOU referred (CW, April 9) to the Manpower Services Commission grant aided training scheme, and stated that grants were available to "employers in selected areas".

In fact, grants are available to all employers except central government for training on specified courses in programming, systems analysis and real time programming. Grants are handled by Industry Training Boards for those firms which are in the relevant industry and by our Training Grants Unit at NCC for firms outside the scope of the ITBs.

Further details of the scheme can be obtained from the undersigned at NCC, Oxford Road, Manchester M1 7ED.

JEFF LOMAX
Careers Projects
National Computing Centre
Manchester

Sloppy recruitment consultants

I WAS interested in Alan Williams' comments in Sales Bit (April 16) with regard to the antics of so-called recruitment consultants who put candidates forward without either interviewing the candidate, or meeting the client. I sympathise very much with his position.

In fact, the situation can get even worse than he described, as some agencies (generally out of the secretarial stable) will arrange interviews with the client over the telephone, sending in the CV or application form at a later date, and sometimes actually having it taken in by the applicant!

The solution lies with the client, and I have made it clear to my clients that the level of service they receive depends entirely on them. If they are willing to accept telephone details, or to see applicants who haven't been interviewed, or have been interviewed by consultants not worthy of the name, then they deserve to waste their expensive time on abortive and embarrassing interviews. Also, if the client is not willing to meet with the agency to assess their competence, and to provide an accurate description of requirements, then the level of service is again bound to fall. And lower levels of service are by no means always reflected in the fees charged.

At this time, when the frantic search for staff of all kinds has significantly abated, clients have an ideal opportunity to decide upon those recruitment companies with which they are happy to have dealings, which will make for a much more ethical and professional service in the future.

W. A. SAMPSON
Managing director
Sampson Staff Ltd
Manchester

Distasteful

FROM his latest remarks on software piracy (CW, April 16) Alistair Kelman seems to be directing criticism towards software authors and away from user groups. As software authors we find his comments "most software authors produce user manuals and documentation that are inaccurate and unreadable" most distasteful.

Were we to pass similar criticisms about the legal profession he would be the first to comment.

It seems quite paradoxical to us that Mr Kelman can denigrate user groups (Software File, March 12) and then wholeheartedly support them.

Reading on through his letter we find that the software author's job has changed from that of producing documentation to actually writing the program. In all fairness, one could say that if a software author picked up a legal text *he* would find it unreadable.

C. WOOTTON
K. MERRICK
Vango

DDS's support analysis

I note from Data Analysis (CW, April 9) that in Rosemary Rock-Evans' opinion there are few data dictionary systems which support the analysis function.

I would like to bring to her, and your readers', attention the availability of a package which supports all the usual requirements for data dictionaries, plus the ability to relate a system design to the activity network, staff assignments, documentation and project progress reports necessary to monitor and control the system development process.

The package I refer to, which is called SDS, Software Development System, was developed at the Royal Signals and Radar Establishment and is now available from Software Sciences on ICL 1900, IBM 370 and DEC VAX 11 ranges.

D. BURNS
Director – Advanced Software Unit
Software Sciences Ltd
London & Manchester House
Park Street
Macclesfield SK11 6SR.

Ill-judged

AS one of the first users of the RML380Z I am now dismayed by its plethora of operating systems and dialects of Basic, its failure to offer a structured Basic and its serious overpricing.

I cannot understand why the DoI (CW, April 9) is attaching such ill-judged conditions to its otherwise most welcome funds for computer education.

ROY ATHERTON
Bulmershe College

History

I AM currently engaged in compiling an alternative history of computing.

The history will focus on the lighter side of the development of the subject, highlighting the failures, the accidental discoveries, the legends both famous and infamous that have helped to shape the present day state of the art.

I would be grateful for any help in the compilation of this work and any contributions in the form of press cuttings, references, personal recollections, etc, would be most welcome.

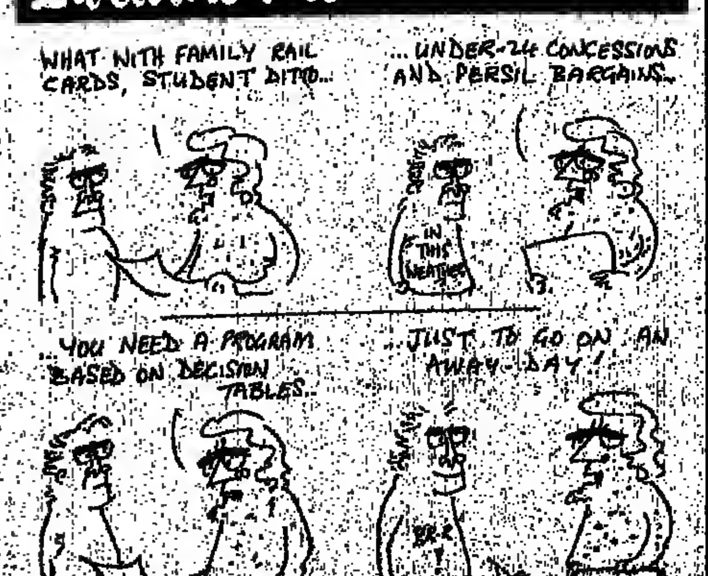
MARTIN WAKEMAN
996 Warwick Road
Acocks Green
Birmingham

Course

G. HARRISON (CW, March 26) and other teachers, may be interested to know that we have been running a course for teachers of computing each June since 1971. What makes our course particularly attractive is that the LEA can recover from the teacher training pool a large part of the costs (including salaries, National Insurance contributions, etc, in some cases) of sending a teacher on this well established course.

GWYN JONES
Principal
School of Mathematics, Statistics and Computing
North-East Wales Institute of Higher Education
Clwyd CH5 4BR.

Liveware File by Dan



PROGRAMMERS PAGE

by Pamela Rowe

What happens to a redundant programming department?

AT the end of last summer a whole programming department was lost when McCorquodale Books closed down its computer centre in Colchester. The team was broken up and its various skills dispersed around the country.

When the time came, all left with firm offers of jobs, most richer from the quite generous redundancy settlements, but some less than satisfied by arbitrary rulings.

Now, eight months later, there is enough perspective to see how they fared: Ken the senior programmer, who doled out the specs, Terry and Bill who both joined as trainees on the same day and who were promoted together through assistant and programmer, and Ian the latest recruit, who had already been redundant once.

To see how it had all turned out, I organised a marathon phone-in.

Terry Croker faces possibly the greatest upheaval. He is in his early twenties, plays sport, and has two major hobbies, squash and space invaders, and other video games in general. On September, 1980 he joined Senosystems of Sudbury and has already reported in Computer Weekly on his early experiences of micros and converting from Cobol to Basic.

At that time, things looked pretty rosy, but now Senosystems is in trouble. His only choice is to become one of the daily commuters over the 60 miles to London.

"And I'm one of the lucky ones," said Terry. "I've been offered a good job in London by Systime, who are trying to absorb the staff, which pays enough extra to cover the fares. But," he was regretful, "I shall lose my company car."

When matters came to a head at Seno, Systime stepped in with admirable speed and in a matter of days arranged interviews in Northampton for the 23 computer and sales staff. Though not interested in supporting the whole weight of the company, it has offered jobs to all but two of the 17 analysts and programmers – primarily in Northampton. For most this means relocation, initially on trial as weekend commuters and weekday boarders.

"London is a lot better," said Terry. "I knew there was a job I wanted there, on a project I was already working on, so I went after it. I'll be working in Old Street, near to Liverpool Street station – the only snag is getting there by 8.45 am." It means an early morning start at about 7.00, and home again by 7.00 in the evening.

Bill Craig was Terry's professional twin at McCorquodale's in that both were promoted in parallel. And like Terry, Bill has branched out into micros and learned to program in Basic.

Technically he is a senior programmer with Eastern Data Processing of Witham, though he says the title carries no supervisory responsibility. He is one of a team of four programmers with four DDE punch girls and an operator, answerable to the managing director.

EDP caters for the smaller local businesses with a Commodore, and for the medium to large companies – one is Lord Rayleigh's Dairy – with an ICL 2903. "The same machine as at McCorquodale's," said Bill. "But we don't have to deal with cards here, all the punching is direct to disc."

Quite a large proportion of the work is amendment, which can be difficult on another's programs, particularly on older versions.

"But the new work we can write to standards," Bill said, "and we have to write our own specs, which is good practice."

Ken Taylor has not found much difference in the work except that he went from a senior's job with responsibility for training and supervision, to the more independent programmer concerned with his own projects and time-tables. He joined Hurst, Gunson, Cooper & Taber of Witham, last September and is one of four programmer/analysts under the DP manager.

Hurst is in the garden and agricultural seed trade and in recent months the main computer effort has been towards a big online system to cover the whole trading operation, from ordering and receipt of seeds through grading, packing and eventual supply.

With his redundancy settlement, Ken Taylor bought a Yamaha XS1100 motorbike to join his 1957 BSA Gold Flash and 1953 BSA Bantam. It takes him to and from his present job in the programming department of Hurst, Gunson, Cooper and Taber, seed merchants of Witham.

Ken commented on the hardware. "I've stayed with ICL, from a 2903 at McCorquodale's to a 2904 here, so the coding is much the same. I still prefer Cobol, though I went on an RPG course in February."

All the programmers are analysts as well, and Ken either writes his own specs or receives them from his DP manager. It is a possible future move for him. "I wouldn't mind taking a formal training in analysis, now that I've encountered and enjoyed it."

Ian Davis perforce spent only a short time at McCorquodale's, since the axe fell four months after he had joined. He left a little earlier than most, in July 1980, to work in the programming department of Ransomes Sims & Jefferies, the agricultural machinery specialists. The move made him financially better off, enough at least to pay the increased travelling costs to Ipswich.

"Ransomes is a large factory on the edge of Ipswich employing about 2,000 people," Ian told me, "so the environment is very different, but the work on financial applications is similar."

Unusually, there has been plenty of development work, mostly on purchase ledger and expense ledger systems, keeping the programmers on full time where other staff have been reduced temporarily to a three- or four-day week.

"The best difference I found when I got here was in using Maxi-Mup. It is an online text editor and means that all the amendments and testing can be done online on a VDU – much quicker. We don't bother with punched cards at all, the coding is put into Redifon tapes and compiled into the computer in about 10 minutes. It's possible to put through ten comps a day easily."

Ransomes too has ICL hardware, this time the larger 2950 with one megabyte of store, and Ian has been able to learn the George II + operating system.

And then there was me. I was a member of that programming department and I joined Computer Weekly in September 1980 to write Programmers Page (née Page Six). Since then I've been involved in a mish-mash of topics from famous authors – Rodnay Zaks on CP/M, to unpublished programmers – Selesort and Science Uncoiled. It's really been no toil and trouble at all.

But now those circs-beyond-human-control have broken out again and I am handing over my baton (ruler), pencil and phone-book to Philip Hunter.

I shall look forward to reading him.

PUZZLER

WHEN a certain six-digit number is split down the middle, and the two halves added together, the resulting "half total" is exactly equal to the square root of the original number. In other words . . .

$$ABC,DEF=(ABC+DEF)^2$$

Can you identify this unique number? The six digits involved are not necessarily all different. For example, both A and C might represent the same digit. Six letters have been used to emphasise the fact that the digit order remains the same on the right-hand side of the equation. Both three-digit halves are valid numbers in their own right – ie D is not zero.

See page 39 for solution.

Jeff in Lib

OP SPOT

This week, Mike Ellis explains the possible role of operations in systems development, design and testing

Operations analyst must influence design of system by getting involved early

THE primary objective of the operations analyst is to ensure that a new system fulfils the design requirements of the operations department. To do this the analyst must influence the design of the system by early involvement in the whole process.

The operations analyst should have no day-to-day responsibilities, and be able to devote time to a project from the day that terms of reference are drawn up.

It is not difficult for a systems analyst to include the requirements of operations into a system design, providing that the operations analyst knows what the requirement of operations are and that they are specified before the design becomes enshrined in a program specification.

The operations analyst's first involvement usually occurs when the systems analyst commits some design ideas to paper. Before then it is difficult to assess the operational effects of a new system.

Documentation standards for systems design vary widely, but usually a feasibility report is followed by a design specification. At the feasibility stage, the operations analyst needs to know the effects of the new system in terms of the likely resource requirements, additional equipment required, impact on operations staffing and significant changes to existing production schedules.

As the system goes through its various design stages and the design is firmed up, then the operations analyst should become more and more involved in the detail of how the system will actually work.

The operations analyst must formally review every design specification for a new system and comment on its acceptability to the operations department. There should be formal acceptance of the design document or provisional acceptance depending upon satisfactory answers to any outstanding problems. The review should cover machine room operation, output handling, data prep, and job assembly and submission.

> It is the responsibility of the operations analyst to ensure that he fully understands what the new system will mean to the operations department and that those parts of the system which are operationally unacceptable, are changed.

It is the responsibility of the operations analyst to ensure that he fully understands what the new system will mean to the operations department and that those parts of the system which are operationally unacceptable, are changed. With experience the operations analyst will be able to contribute to the writing of the design specification in those areas which affect the operability of the system.

The following design requirements are examples of the type of standards which operations may require systems designers to follow.

- Programs should tie up resources only for as long as they are required.
- An online system must inform the operator clearly when it may be closed down.
- Systems should be capable of running with no data when the occasion demands.
- Variable information (eg depot numbers and names) must not be held as constants within programs. They must be held on a file that can be updated and checked separately.
- Programs which run for more than half-an-hour elapsed time or 15 minutes central processor time must have a restart facility. Job control language should be structured to allow restarts for an activity rather than for a job.
- Time required to back-up the application is part of the resource requirements of the new system.
- All sequential files must have standard header records with file name and version number and standard trailer records with item counts and hash totals.
- Applications must carry out automatic rather than manual reconciliations whenever possible, to prove the integrity of the system.
- The number of parameters to be input must be kept to a minimum. Ideally parameters should be held on disc.
- All output reports should have standard headings showing report name, date, week and day number, page number and program producing the report.
- All output reports must be terminated by an end of report message.
- Reports produced at a central site for transmission to a remote site must be buffered remotely rather than centrally to allow for local reprinting.
- Mainframe programs must handle invalid input data without aborting. The invalid data should be rejected and reported upon, thus allowing processing to continue.
- There should be a standard input system for all applications. For daytime online systems with overnight batch processing, the availability of the online system must not be jeopardised by the non-completion of the batch processing. Operations must have the facility to abandon overnight processing, bring up the online system and do a double run the following night.

Many of these requirements are self-evident and should be part of good program design. However, since there is no guarantee that this will happen, the operations department must protect its own interests and place these requirements on the designers. The design requirements will be compiled by the operations analyst. At all times the operations analyst must represent the concerted views of the whole operations department.

Systems testing, where the analyst proves that the design and program actually meets the business requirements, is probably the most critical phase of project development. To ensure that the operations department is given a system which really works operationally, the operations analyst must take an active role in the testing of the new system. He must form part of the testing team, must specify what tests are to be included in the testing plan and must be involved in running and monitoring the tests.

There should be three levels of testing a new system; at program level, subsystem/link testing level and the total system test.

The operations analyst is involved in the latter where the system is run in an environment as close to normal production running as possible using production input files, production files placements, production job control language, production documentation and production people.

It is important to recognise that total system testing usually requires significant amounts of human and machine resources and can add several weeks or months to the duration of a project. It should therefore be part of the overall project development plan and its importance should be stressed to the business users.

The responsibility for the total systems testing phase belongs to the development project leader – as does every other development phase. However, it should be a joint exercise between systems and operations staff. If the test is to take the form of a parallel run, then users may also be involved.

Before the actual testing can begin, there is a lot of preparatory work which must be done by the operations analyst.

JCL for each new system should always be written by the operations analyst to ensure that operations standards can be maintained across all applications. JCL must be designed for normal runs of the system, plus any extra runs concerned with security copying of files, transfer or conversion of files from other systems, initial master file creation and any other special jobs to aid in error recovery.

Restart JCL must be designed either as separate jobs or as facilities within the JCL for the job.

The ops analyst must also determine the file placement of the new system in conjunction with the relevant production staff. Will the files be on tape, or on fixed or removable discs?

Ideally, the production manual for the new system should be available during the total systems testing phase to enable production staff to resolve minor problems in running the tests. The ops analyst must be responsible for writing those parts of the manual relating to file placement, JCL and recovery.

The operations analyst should devise a series of tests covering reliability, restart and recovery, interfacing and destructivity. Because a total systems test is an attempt to mirror a production environment, it should be run and monitored by operations staff.

After all tests have been successfully completed, the operations analyst should produce a statement of the resources to run the new production system. This should cover elapsed time, disc drives/disc packs, tape drives/tape reels, core required and file space. This requirement should be compared against the previously accepted resource requirements at the earlier design stage and should be formally accepted by the production staff.

Implementation is a critical phase which can potentially disrupt the running of existing production systems and thereby put the business at risk. The operations analyst's primary responsibility in implementation is to ensure that the new system is introduced in a controlled manner, with minimal disruption to existing applications.

Mike Ellis is operations development manager with the Littlewoods Organisation in Liverpool.

Yet again, early planning is vital and should begin at the detailed design stage when an overall strategy is established. The plan should describe how the implementation is to be phased, over what period of time, what each phase will consist of and whether there is to be a pilot run. The preparation of the plan should be the joint responsibility of the operations and systems analysts.

Members of the implementation team should be on-site to manage the actual implementation, with on-call support available if necessary.

As a member of this team, the ops analyst should try to be on-site during the most critical operational phases. He should ensure that everyone within operations is aware of the system implementation by notifying all interested parties of the date of the system implementation, what it does, the programs and JCL files affected, the contingency plan in the event of failure and the on-call and on-site support provided. This should be done via a formal new system document.

> To ensure that the operations department is given a system which really works operationally, the operations analyst must take an active role in the testing of the new system.

The only people who should really be affected by the new system are those users who requested it. It should be transparent to all other users that the change has taken place.

A final tip: Do not arrange the post implementation celebration too soon after the system has gone live. I have known more than one occasion where a new system has failed within the first week and operations have not been able to locate anyone to provide support, because the whole team has been out celebrating a successful implementation.

Correction

IN the April 9 Op Spot we reported incorrectly that Mr Ian Cheeseman was ops manager for Municipal Mutual Insurance in Maidstone. Mr Cheeseman left the company's employ in February.

Director of special systems for Digitus

CO-FOUNDER of Logica, Steve Feldman, has joined Digitus as director of special systems. Feldman is also a former manager of the computer sciences and micro logic divisions of Data Logic.

Steve Feldman

He has over 20 years' experience as a computer user, consultant and manager in the UK and Europe. He started his business career as a statistician. In 1964, he joined Scicon as consultant and worked on the design of real time systems for air defence and air traffic control.

He co-founded Logica in 1968, taking responsibility for a variety of projects, including the UK natural gas telemetry and control, graphics studies, product surveys and hotel reservations.

He joined Data Logic in 1974, establishing the company in minicomputer systems and subsequently becoming responsible for microprocessor projects.

He will direct Digitus' development in distributed systems and local networks.

Chairman for Aregon

A CHAIRMAN has been appointed at Aregon. He is Alfred Singer, currently chairman of Cannon Assurance and of Wholesale Vehicle Finance. He is also on the boards of Guinness Mahon, Equity Capital for Industry and Gestetner Holdings.

Singer is a Fellow of the British Computer Society and former chairman of NEDO's Computer Sector Working Party. Before spending five years in the public sector as managing director of the National Giro Bank and as chairman of the Post Office Pension Fund, he was deputy managing director of Tesco.

Aregon obtained its initial funding from the NEB, and expects to get further finance from private institutions.

- **Seymour Hoskyn** has been appointed senior consultant with CMG Computer Management Group. He was formerly with Arthur Young Management Services.

- **Jack Walker** has been appointed regional manager, engineering services, for Control Data. He joined the company in 1968 and served most recently as manufacturing and distribution manager for Control Dataset in Stevenage.

Ford

Sinclair

O'Brien

Edmonds

Thomas

Denyer

- **Janet Ford** has joined MSA as systems consultant, specialising in the Q-Pac Payroll and Personnel system. She joins the company from Marconi Avionics, where she was a systems analyst.

- **James Sinclair** has been appointed manager of I. P. Sharp's new office in Hong Kong. Since 1979, he has been a senior consultant with Sharp in Europe, specialising in planning, operations research and database management.

- **Pat O'Brien**, formerly a senior sales executive with UCC, has joined Small Information Systems Company Sisco, as sales director, heading the company's word processing division.

- **Ray Edmonds** has joined Harris Information Systems as London West End district sales executive. He previously held a sales management position with Data 100.

- **Chris Thomas** has joined T-Bar International (Europe) as European product marketing executive, responsible for the newly formed division to handle the company's datacommunication products. He joins the company from Tektronix, where he held a sales position.

- **Tim Denyer** has been appointed regional sales manager for London and the Home Counties at Cifer Systems. He has been with the company for five years, working as sales executive for this area.

- **Richard Leeson** is to head the new London-based subsidiary of Compact Accounting Services CAS, Compact Accounting (London) CAL, as managing director with a majority shareholding. He joins CAL from the Enterprise Systems Group where he was systems planning manager.

- **Fred Mobbs** has been appointed managing director of Control Data. He has been with the company since 1965. During his time with the company, Mobbs has held several international sales and general management positions, including regional sales manager for East Europe, based in Vienna; country manager for Switzerland and regional manager for a group of countries in Western Europe.

- **Harry Binney** has been appointed Northern Area sales manager at Digico. He was previously with Data General. Avla Kyle, formerly a sales executive at Control Dataset, joins the company as sales executive for London and the South Eastern territory.

- **James Colbert** has joined MSA as systems consultant specialising in payroll. He was previously support manager for Peterborough Data Processing.

- **Clare Rlee** has been appointed vice-president of marketing and assistant to the president at Rockwell International's Commercial Electronics Operations (CEO), in Dallas, Texas. He spent the last six years as Avionics Group president.

- **Philippe Courtot** has been promoted from international sales manager to general manager of Latin American and Canadian operations at Modcomp. He has been with the company for five years.

DIARY

MAY 5

Branch AGM/social evening. IDPM Scottish branch. Station Hotel, Stirling.

Personal Computing and its Impact on Data Processing. IDPM Birmingham branch. Dudley College of Technology, The Broadway, Dudley. 7.30.

AGM followed by film show. BCS Kent branch. Kings Head Hotel, High Street, Rochester. 7.30.

AGM followed by The Computerised Management and Control of Mini Metro Production. BCS West Herts branch. The Watersmeet, Rickmansworth. 7.15.

MAY 6

Don't Shoot The Auditor – He's Doing His Best. IDPM Sussex branch. Stanford Arms, Preston Circus, Brighton. 7.00.

MAY 7

Introduction to the ME29. BCS Preston and district branch. The Polytechnic, Preston. 7.30.

MAY 11

AGM followed by The Society and its Membership. BCS East Anglian branch. Norwich Union Social Club, Pinebanks, Norwich. 7.00.

MAY 12

AGM followed by Computers and Medicine. BCS Birmingham branch. Wheatsheaf Hotel, Coventry Road, Sheldon. 6.30.

Visit to a Harlow School. Steve Leverett, Chelmer Institute of Higher Education. BCS Harlow branch.

AGM followed by Members' Evening. BCS North West London branch. Railway Hotel, Greenford. 7.45.

MAY 13

AGM followed by Prospecting, Pits and Programs. BCS Bristol branch. St Vincent Rocks Hotel, Clifton. 7.15.

AGM. BCS Edinburgh branch. Mountbatten Building, Herriot-Watt University. 5.30.

AGM with demonstration of small computer systems. BCS Kingston branch. The Polytechnic, Penrhyn Road, Kingston-upon-Thames. 7.30.

AGM followed by wine and cheese. BCS Newcastle branch. Ellison Building, Newcastle Polytechnic. 6.00.

AGM and presidential visit, followed by wine and cheese. BCS Sussex branch. Brighton Polytechnic, Lewes Road, Brighton. 7.30.

AGM. BCS Teeside branch. Teesside Polytechnic, Borough Road, Middlesbrough. 7.00.

CONFERENCES

- THE first International computer metrology congress will be held in Paris from May 12-14. Organised by the Computer Metrology Laboratory and Temps Reel, the French data processing journal, the theme of the congress will be How to Increase Computer Productivity. The aim is to help DP managers and technicians concerned with the evaluation, control and performance management of information systems to find out about recent developments in techniques and methods used throughout the world. Details from Congrès Metrologie Informatique 81, L.M.I. CEGOS, Tour Chenonceaux, 204 Rd Pt du Pont de Sèvres, 92516 Boulogne Billancourt Cedex. Tel: 620 60 00.

- A TWO-DAY colloquium has been organised by the Institution of Electrical Engineers. It will be held from June 9-10 at the IEE in Savoy Place, London, and the theme will be Technological Developments for the Office of the Future. The meeting will examine the impact of automation on the Office of the Future, and highlight the technical aspects that will make such developments possible. An exhibition of the equipment mentioned in the papers is planned. Details from Christina Dagnall at the IEE on 01-240 1871 ext 280.

- THE European Consumer Electronics Show (ECES 81), scheduled for May 10-13, has been postponed for one year and will now take place in May 1982. The venue remains the Nürnberg Fair Centre in West Germany and revised exhibition dates will be announced by the organiser, Industrial and Trade Fairs Ltd, within two months. The event has been postponed because participating exhibitors have indicated that manufacturers in new product areas are having difficulty matching supply with demand levels. Others in the more established consumer electronics field have postponed new product launches. Further information from UTF on 021-705 6707.

- MICRO Fair 81 will be held at the Hawthorne Hotel, Bristol from June 12-13. Organised by the Bristol branch of the British Computer Society, the aim of the event is to disseminate information and promote small business and public awareness of current microcomputing development. Enquiries to P. Hemming on (0272) 693871 ext 904.

As a follow-up to Data Analysis (concluded last week) this three-part series describes aspects of the Legol project

Direct observation gives the best data for programming organisations

by Ronald Stamper and Peter Mason

FOLLOWING the series of articles on data analysis, readers might like to know something about the research being conducted in this field. This article and two subsequent ones will describe the relevant aspects of the Legol Project.

Legol is a language for systems analysis and design which is being developed at the London School of Economics. It will enable the analyst to specify how an organisation runs or should run by writing its rules. Legol is a language in which legislation can be written precisely and formally. When you use it, it is as though you were programming an organisation.

As a by-product, you are also writing a computer program in a very high-level language. Legol has an interpreter. However, not all the operations performed in an organisation can be performed by a computer. Judgments have to be made by people, and so do most observations and actions. Thus Legol also specifies, as accurately as necessary, these human actions. The interpreter handles these by generating a dialogue.

A language for programming an organisation cannot be designed without giving special attention to information analysis. It must have a well-defined connection between data and reality. Just as every expression in a programming language has a precise meaning in terms of machine operations, every expression in Legol must have an exact real-world meaning.

Meanings are what we are concerned with when we do the information analysis that precedes the writing of rules. We refer to the process as semantic analysis, the result as a semantic schema and the rules governing the structure of a scheme as the semantic grammar.

The problems of finding an adequate theory of meaning are not at all simple. Lack of such a theory is the main deficiency in the current techniques of data analysis. We now have a solution and are presently testing it. A recent additional grant from our funding body, the Science Research Council, will help with this work. Anyone who would like to collaborate is invited to get in touch.

It may help readers of the series on data analysis if we use an example from the series. Figure 1 is the model of a hospital appointment system which was produced by data analysis.

Data analysis is concerned in this hospital case study with entities ("anything relevant to the enterprise about which information is or could be kept") and meaning ("defining what things in the enterprise mean is the most important part of the job").

We also adopt this point of view, and go on to develop it further.

The importance of making sure that the contents of a database are meaningful cannot be overemphasised. Managers and other users are dependent upon the quality of analysis for any confidence they place in retrieved data as a basis for their judgments and actions.

But how can we analysts give any guarantees in this matter unless we have a criterion of meaningfulness by which our workmanship may be tested?

Data analysis and other versions of the "entity-relationship-attribute" data model rely upon an essentially intuitive notion of meaning. Their three basic concepts are defined with less precision than we require when defining a language for programming an organisation. The analyst is even allowed to turn an entity into a relationship or a relationship into an entity.

This does not matter so much if the result is to be a data structure for programs to operate upon. The data elements that result are then thought of as representing concepts in the minds of the users and the result of analysis is usually called a conceptual schema.

However, we have developed a theory which is based upon the notion that individuals must be defined in *terms of activities that must be performed within an organisation to establish their existence*. This provides a criterion for testing an entity model. We have suggested that the most reliable activity is direct observation. A theory of meaning which anchors itself to direct observation will, by analogy, be the most reliable way of underpinning an entity model.

The surest way of understanding an organisation is to look at it directly, not at its data. Observing a doctor at a clinic will tell us more about what he/she actually does than will the job description. To determine a stock level, it is ultimately necessary, as every auditor knows, to go to the warehouse and do some counting. Concepts in the minds of users are not wholly reliable.

> Legol is a language in which legislation can be written precisely and formally.

Let us consider how this demand for objectivity might affect the model proposed in Figure 1.

If you walked into a hospital by chance, you might observe the people inside before realising what roles they were performing. A basic entity, therefore, should be PERSON. We do not assign attributes to DOCTOR and to PATIENT, as *separate* entity types, knowing that one may have to build into the physical implementation a special way of linking them back together. Attributes of a PERSON naturally belong to a PERSON entity. It may be only infrequently that a person is both a DOCTOR and a PATIENT, but it is misleading to regard them as distinct entities.

We can directly observe people acting as doctors and patients. A person is in the role of patient because he has a relationship with the hospital, he may receive medication and treatment, or at least he can expect them. Such roles are only really meaningful, in terms of our theory, in the context of such a relationship.

We would not write down PATIENT as an entity type, but establish a relationship, say ACCEPTED BY, linking PERSON and HOSPITAL. Having done this, we call the role of the PERSON in that relationship PATIENT. Such relationships, like entities, may be capable of direct observation.

> The importance of making sure the contents of a database are meaningful cannot be over-emphasised.

It is true that there are abstract ("conceptual" is a term we avoid) entities and relationships such as "Theatre Session" and "PATIENT is wait listed for WARD". We shall see later, however, that there is no need to take such concepts on trust.

What is common to entities, relationships, and attributes is that they all have periods of existence; a person has a lifetime, a doctor is contracted to work in a hospital for a specific period, and a person has a certain blood pressure at a given time. (How to assume what values it has between observations is a matter for medical theory or clinical judgment, and represents an abstraction based on the primary data.)

There is no need for three constructs: entities, relationships and attributes. In Legol only entities are employed. The advantage of this is to remove many possibilities that two analysts may model the same thing in two different ways, for example, one as an entity, the other as a relationship.

According to the Legol theory, only those entities should be defined for which there is a meaningful period of existence and for which we can specify how their existence is established or identified in the organisation.

To identify an individual such as PERSON, we need to know the name and a procedure, relevant to a context, for identifying the individual given the name. This might be, for example: "Go into the waiting room and call out the name". The relevant name in other contexts might be the first name (Have you seen Bill?) or national insurance number (checking if a person "exists" in the context of the NHS).

So-called "relationships" and "attributes" simply have extra steps in their identification, but the principle is the same. For example, "Call out for Mr Smith by name, ask him to stand on the weighing machine and record his weight" (attribute WEIGHT), or "Find out if Mr Smith (named individual) is at B hospital (named individual) and is in EMPLOYMENT-AS-A-DOCTOR".

This EMPLOYMENT relationship might be established in a number of ways depending upon its organisational meaning. This could be "working in the hospital at the moment as opposed to working in others at other times in the week" – a directly observable relationship, or "contracted to work in the hospital" – a legal relationship.

The latter meaning is probably the relevant one to the model.

(The legal notion of DOCTOR as someone both academically and professionally qualified to practise would be a role of a PERSON in relationship, perhaps to the BMA. This might be relevant in the context of appointing staff rather than of making appointments for patients at the clinics.)

Given the context, it is clear which is the meaning of the EMPLOYED-AS-A-DOCTOR entity. Whatever the context, DOCTOR cannot be valid as an isolated entity for which a period of existence is not meaningful. It needs to be thought of as a role.

This slotting in of concepts to an unambiguous place in the model is important. It encourages the production of a standard, stable model of the organisation. *Any alterations in the model can then be seen for what they are – necessary aspects of the compromise to fit the model to a DBMS schema.* We would represent this unified view of "entities", "relationships", and "attributes" as entities in Figure 2.

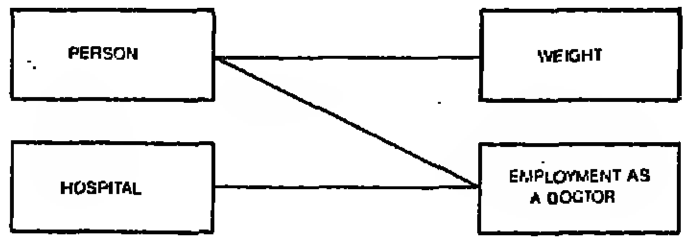


Figure 2. Unified view composed of entities only.

The lines signify that an entity on the right is identified by another on the left – you need a PERSON to measure a WEIGHT, while you need a PERSON and a HOSPITAL to determine whether the hospital EMPLOYS the person as a doctor. WEIGHT is thus linked to PERSON but it is treated as a separate entity, since each value of WEIGHT will have a different period of existence from that of the PERSON.

Likewise, instances of EMPLOYMENT will exist, at some period, or possibly at several periods, during the co-existence of the PERSON and the HOSPITAL. We say that PERSON and HOSPITAL are identifying entities of the entity EMPLOYMENT.

> Lack of an adequate theory of meaning is the main deficiency in the current techniques.

To summarise, Legol imposes a more rigid discipline upon analysts than the currently used techniques for data analysis. It insists upon our being able to relate entities to behaviour. This basis of meaning is exactly what a manager needs. For him, information from a computer system should be connected securely to actions which can be taken, or events which have happened.

Abstract entities (called by others "conceptual entities") are related to more concrete entities. The identifier structure which Legol contains imposes this discipline.

The two following articles will explain other innovations which enable Legol to reduce the arbitrariness in schemas. Current methods of data analysis go a long way in this direction, but our research shows that far more has to be done.

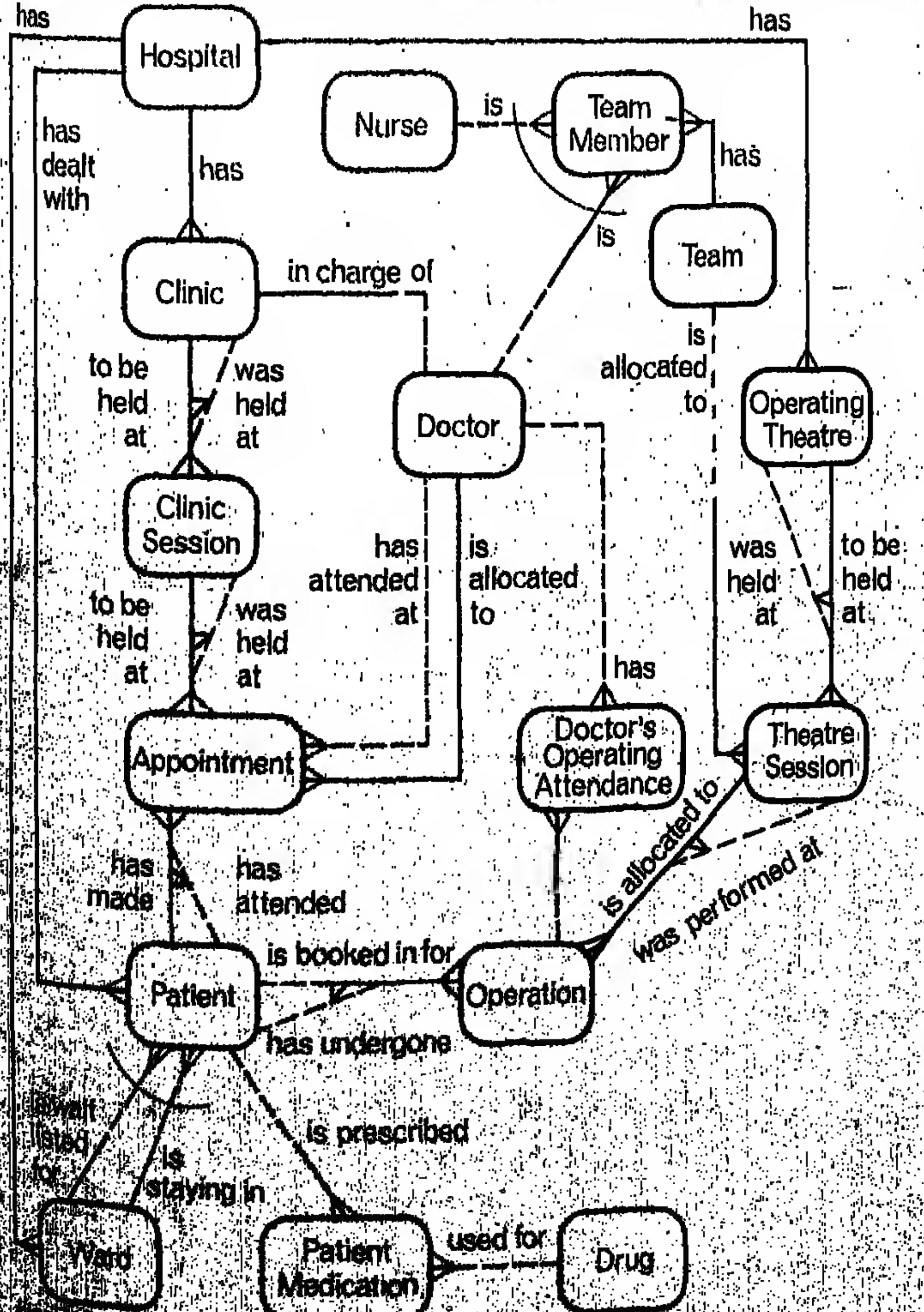


Figure 1. Data analysis model of a hospital appointment system

Legol – Part 1

We are complementing Rosemary Rock-Evans' 27-part series on the Data Analysis method with three articles written by Ronald Stamper and Peter Mason of the London School of Economics. They have been working on a technique called Semantic Analysis which is claimed to have the flexibility to allow the analyst a late change of mind. Semantic Analysis is a by-product of the Legol project.

The project was started in 1971 by Ronald Stamper, helped by IBM funding, as a study on the fundamental problems of systems analysis. Peter Mason joined when SRC funding began in 1974; he wrote the interpreter for Legol–1. Susan Jones, now of City University, worked on Legol–2 and Clare Tagg, on secondment from the Bank of England, wrote the interpreter for Legol–2.1. Jo Marks, the latest member of the team, is working on the Legol–2.2 interpreter. This it is hoped to have ready for collaborators to use in the near future. A radically improved system, Legol–3, is under development.

Information about the project can be obtained by writing to them at the London School of Economics, Houghton Street, London WC2.

COMPEC EUROPE PREVIEW – 1

Compec Europe in Brussels has attracted over 50 exhibitors to the Place Rogier exhibition centre for the three-day show starting on May 5. In this three-page special feature we first report on the companies making the trip to the heart of the EEC market, and then turn the spotlight around to see how foreign-owned companies have established themselves in Britain.

Showcase of the DP industry moves into the EEC capital


Hewlett-Packard's Personal Graphics System, to be seen at Compec Europe, is made up of an HP Series 80 personal computer (centre), plotter and flexible disc memory, and an HP 9111 graphics tablet (in use, right).

by Anthea Ballam

SIX months after the success of Compec 80 at Olympia in London, the outstanding showcase for the data processing industry and its users will demonstrate its international appeal in Brussels. The exhibits are exceptional, with an array of established and new names, and a number of significant developments that are bound to excite interest.

Among those exhibiting are companies represented both in the US and Europe, and also those indigenous to the Benelux countries. Thus Compec Europe will fulfil its promise as a truly international show.

One of the best known names, regularly featured at Compec, is Hewlett-Packard. The products on display will include the 7220C, 7221C and the 9872C series of graphics plotters. HP is clearly enthusiastic to emphasise its products in the peripheral arena. The high quality HP 7580A drafting plotter will be highlighted although the company will not overlook its proven products in the mini and microcomputer market. The company's own personal computer, the HP-85 will be seen at Compec Europe alongside a microcomputer development system, the HP 64000.

Another famous name at the show will be General Automation. The chosen star product will be the Nocode software which will be run on GA-16/200 and GA-16/400 series minicomputers. This system allows applications software, particularly those for business functions, to be generated at high speed, eliminating coding procedures and manpower costs.

An important Belgian participant, Prodata, will be making the most of its acclaimed point-of-sale products, a major representative being the model C70. A fully programmable and modular unit for standalone sales and stock recording applications, the C70 offers between 160 and 560K of mass storage, and a choice of add-on facilities. The company will also feature the Omega word processing system which has also proved highly successful in the UK, marketed by Prodata's sister concern, Compucorp.

Peripherals for DEC minis will be demonstrated on the NV ASAC SA stand.

The exhibition will provide a splendid showcase for the microcomputer enthusiast. An entirely new microcomputer will be shown by Fimeca, a model called the F 1300. Fimeca also represents Cipher Data Products in Belgium, and a tape drive with microstreamer will be demonstrated.

The ubiquitous Apple microcomputer will be shown on the stand of Bell Telephone Consumer Products. The latest model, Apple III, will be featured in conjunction with a host of colourful and useful peripherals.

Another well-known micro, the Zilog, will also make its presence felt on the Heliagraph PVBA stand. Here again we are promised some useful add-ons in addition to a low-cost multi-user system designated the Onyx.

The Japanese micro manufacturer Sord will be represented by Egemin NV and among the models on display will be Sord's top-selling model, the M223, which will be demonstrated alongside a new and more powerful microsystem, the M243.

Special micros for use in industrial and scientific applications will be featured on the Incaa display. The range will highlight the Incos modular system and the Shaman development system.

A standalone video computer incorporating the standard CP/M operating system has been promised by Rodelco BV. The product is manufactured by Intertec Data Systems and will be shown alongside a selection of intriguing software and hardware products including the Dolphin series matrix and line printers and the well known NEC Spinwriter.

Microcomputers and printers will also form the major part of the Olympia stand. Star of the stand will be the Boss micro which incorporates a 32K RAM and an impressive choice of interfaces and peripherals. The Olympia Typewheel printer will also be demonstrated in an operational environment.

A company specialising in Euroboard products, Gespac will display a computer module based on a 68000 microprocessor on a 160 x 100 mm standard board. Compatible with all the interface modules specified for the G-64 bus, the module is designated the GESMPU-4 and will be shown with a variety of 16-bit new memory modules.


CAT, the computer aided tutorial terminal from Prodata, will be on show in Brussels.

As usual Compec will also provide an opportunity to see the latest terminal products. From MSI Data International a full range of terminals will be seen, including new user-programmable portable units.

A video display terminal with microprocessor control and a special non-glare screen will form part of Compudata's offering. Called the model TVI 912B it offers a keyboard with both upper and lower case characters on a screen with 24 lines and 80 characters. Its sister terminal features an alternative typewriter-style keyboard. Other items on the display will be a video printer and a selection of new matrix units.

Another microprocessor-based terminal product of interest will be the range from Teleprint Benelux. Here again a comprehensive video display feature will be shown with a selection of matrix printers offering a choice of speeds and capabilities.

The established Beehive display terminals will be exhibited by Target Systems, which will also demonstrate printers and a variety of microsystems.

Circular polarisers from Polarisers Technical Products (UK) will enable users to restrict glare on video terminals. The Polaroid CP70 range is available with both glass and plastic [illegible] that provides contrast enhancement that is claimed to reduce operator fatigue.

Graphics terminals will also play their part at the show. On the NV Noron stand the ISC (Intelligent System Corp) colour graphics terminal can be seen. It offers high resolution and an exceptional choice of colours, and a variety of graphics facilities.

A range of high and medium resolution raster graphics displays will form part of R and H Systems' display. The range will include exhibits from Genisco providing both colour and grey scale images as well as products from the stables of Vector General, Applied Dynamics and Image Resource.

An exciting exhibit will be expected from the major computer graphics manufacturer, Calcomp, which will reveal the Graphic 7 vector refresh terminal system and the Model 31 Colour Graphics Hardcopy Unit. Plotters from the Calcomp range will also be highlighted including the drumplotter model 1051. This will generate up to A0 wide drawings by means of four program selectable pens.

Historically Compec is a peripheral show, and companies that display a selection of these add-ons retain the true spirit of the exhibition. For example C.N.Rood has promised a host of items, varying from daisy wheel printers to Kennedy tape transports and the proven range of Micropolis floppy disc drives and the Microtek low-cost matrix printer. The exhibit will also feature A/D and D/A converters and modules from Data Translation.

Another haven for those with a taste for peripherals will be the MCAB stand. The Brussels-based firm will show the Shugart family of disc drives, a selection of the latest Winchester-style discs including the latest 5¼-inch storage system.

Compec Europe 81 is the chosen launch-pad for 3M Belgium's latest HCD 75 high capacity cartridge drive. This is a 67-megabyte user capacity drive which features a fully buffered I/O channel. The stand will also be used to demonstrate 3M's full range of drive products.

Another major protagonist on the peripheral scenario is Facit, which will demonstrate tape equipment, terminals and printers offering a choice of speeds and performance capabilities.

A full array of storage systems and disc drives will be revealed on the Nenimy stand. Based in the Hague, the company markets products from the house of Quest, Pertec and Advanced Electronics Design. The peripherals from Nenimy's Pertec range include cartridge Winchester and floppy disc drives and a selection of printers. From Quest the display will feature drum and flatbed plotters while the AED items include floppy, Winchester and mass storage subsystems and an intelligent programmable colour graphics terminal.

A new subsidiary serving the Benelux region will be announced by Versatec. The products from this company will include electrostatic printers and plotters and a special low-cost unit designated the V/80.

Europdata Systems will show its latest data entry terminal, called Scorepak. Data can be entered onto the diminutive keyboard or by means of a standard scanning wand. It incorporates a 4K to 64K character NMOS memory and is exceptionally lightweight. Standard accessories with Scorepak include battery charger, acoustic coupler, desk stand and operator's manual.

Antwerp-based Data Process Belgium is a systems-house offering an extensive range of services. These include the provision of feasibility studies, turnkey projects, training courses and project management services. The organisation places considerable emphasis on operational standards and promises to be an interesting exhibitor at Compec Europe.

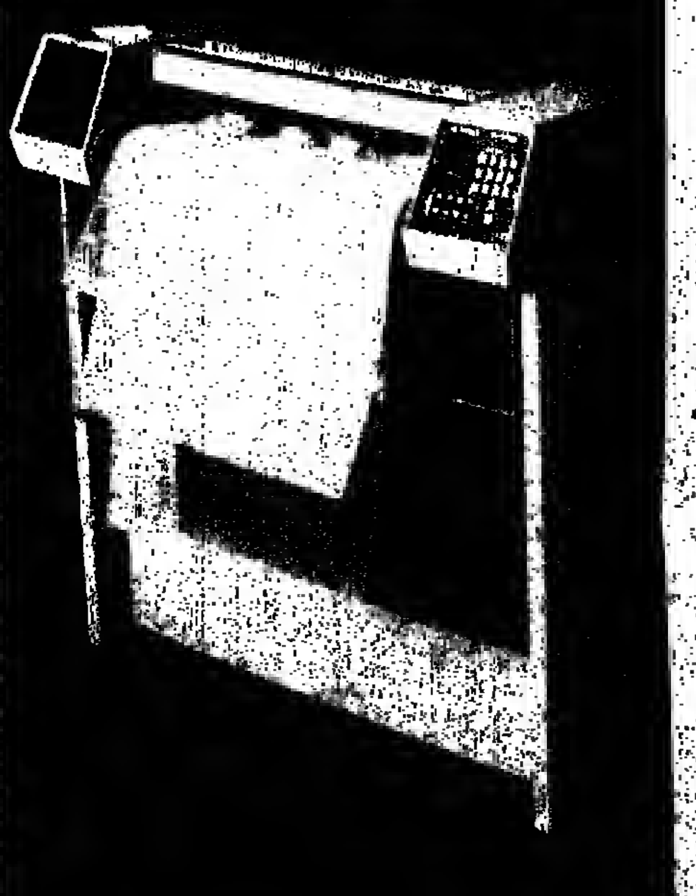
Another unusual exhibit will be provided by Fichet-Bauche. This company will show its extensive range of fire safes, capable of storing both paper and magnetic media.

A third generation intelligent portselector with integrated protocol conversion capabilities will be the star of the stand for Datus Nederland. Designated the Datus 5810 portselector it can be connected to other 5810 systems remotely through the in-built intelligent statistical multiplexer facility.

Brussels based MBLE Data Switching will feature communications products including a selection of modems.


A self-contained hand-held data [illegible] and communications terminal, the Scorepak, will feature on the Eu[illegible] Systems stand.


[illegible] on the [illegible]


A [illegible] moves the sheet in one direction while the pen carriage moves [illegible], making the new HP 7580A, to be seen at Compec Europe, [illegible] to be the fastest large-format pen plotter in the world.

COMPEC EUROPE PREVIEW – 2

Robin Laurance asks if foreign companies can be expected to step up their UK investments in today's climate

IBM is backing Britain because 'you can't beat it for value in people'


MAISONROUGE . . . "Our British plants are sometimes more productive than the others."

SOME 20% of the UK's manufacturing industry is operated by subsidiaries of foreign companies. It is a statistic the government is happy to talk about.

Ministers are not quite so happy when they are forced to admit that without that considerable foreign investment, the economy as a whole and the level of unemployment in particular, would be even worse than it is already.

In short, without those foreign investors, the British economy would be in ruins, not just in need of urgent repair.

But in today's decidedly unhealthy climate, can those foreign companies be expected to further their investments here?

IBM, for one, says it can. The UK company says its investment plans are as energetic as ever. Some £132 millions were invested last year. Extensions are being added to the headquarters at Portsmouth; a materials distribution centre is being built next to the Greenock manufacturing plant in Scotland; and the General Business Group expanded its premises in London and Basingstoke.

On the South flank in London – along Coin Street, just downstream from the National Theatre – a start has been made on a new data processing marketing centre for the London and South Eastern region. It will provide offices for about 1,000 people, with the opening planned for 1983.

But why invest in a country whose economy is in difficulties with inflation running at 12.6% and unemployment beyond the 2½ million mark?

The answer, in a nutshell, is productivity. The very thing which Mrs Thatcher complains British industry is so bad at, is precisely what IBM's UK plants are so good at.

According to Jacques Maisonrouge, chairman of IBM Europe, the company's two British plants are as productive as any they have anywhere. "In fact," he said recently, "they are sometimes more productive."

IBM monitors productivity closely, comparing the results of plants producing the same machines. When the Havant plant was producing the 3033 processors it was doing so more cheaply than other plants. Greenock similarly is right now turning out the popular 3278 monochrome display unit more cheaply than elsewhere.

Borrie Morgans, IBM UK's finance director, explained why: "My main investment is in people," he said. "And when you are looking for value for money in people, you can't beat Britain."

Morgans is careful not to describe his British staff as cheap. But the fact remains that while IBM itself still pays slightly above the odds, salaries in the computing industry are, like most other industries, lower in the UK than elsewhere.

"But their quality at all levels," Morgans adds, "is as good here as it is anywhere."

He might even have gone further. The establishment and continuing growth of the research and development centre at Hursley, near Winchester – a centre which serves IBM worldwide – is an indication that at the highest level of computing skills, the quality of British scientists, mathematicians and engineers is rather better than elsewhere. IBM is not the first foreign-owned company to invest in British brains.

But not only is the labour force here relatively cheap and apparently of good quality; it is also flexible. And flexibility, as Morgans points out, is vital in a fast changing industry like computing.

"Look what Greenock was making 30 years ago – the first electro-mechanical machines and assemblies which required a labour intensive operation – and look what it's producing to-day. The technological change has been dramatic."

More significantly, the change was dramatic without being traumatic. The necessary transition has been made without the loss of a single day's production, says the company. IBM still operates in the UK without union involvement in an atmosphere which the company describes as "the freedom to manage."

So the high quality, low cost, flexible labour force is what brings IBM to the UK. Other factors ensure it is kept here. The company has more than 200 domestic suppliers, and while the preference for UK suppliers is certainly in part to keep the trade balance politically acceptable, it is also because the company says those suppliers provide the kind of service IBM demands.

"In price, quality and delivery," says Morgans, "we have suppliers with proven records."

To overcome any reluctance among component manufacturers to invest, the company uses its own capital in the form of tooling and inventories to help launch new component lines.

Making that kind of investment, and investing in the company's own research and development programmes, is something the British government is naturally keen to encourage – and with some very real benefits. Capital expenditure on scientific research and certain machinery and plant qualifies for 100% first year allowance against profits for corporation tax purposes – which Morgans finds very attractive.

Other factors which make investment in the UK desirable are less easy to quantify and therefore have weaker followings. There is the underlying belief among the company's marketing men that a manufacturing presence is important, and with a row blowing up in Brussels over IBM's alleged breaches of the Treaty of Rome, a manufacturing presence in Europe would seem to be particularly essential.

Also, of course, it is the prospects for future business here that are compelling the American-owned computer company to further its investments in Britain.

Because the computer market in the UK is one of the most competitive outside the US, the company seems bound to keep a strong presence here.

"Our markets here", says Morgans, "are dynamic – enormous. We firmly believe that when industry sorts itself out and the economy takes off again, demand for both hardware and software will grow fast. There is already expansion in the banking, insurance and retail areas; and there are countless small businesses ready-made for small machines.

"And as the cost of labour here continues to rise to match those elsewhere in Europe, there will be an even bigger demand for our products".

Jacques Maisonrouge summed it up this way: "If there is good management, you can do as well in the UK as anywhere else in the world. I have full confidence in the ability of the UK not only to survive but to get out of the present crisis".

Anthea Ballam looks at the balance between multinational profits and more local issues as UK comes out of recession

Slimmed-down Britain offers big returns to overseas investors

WITH optimistic predictions that the UK recession is on the decline, it seems that now is a good time for US and international investors to set sail for British shores.

Britain has long been viewed as a vital key to the European sales arena, both by virtue of its geographical position and its language. Within the British Isles alone the potential market embraces some 56 million people, while the European scenario includes a further 250 million.

For pioneering commercial spirits this must be a tempting prospect, although some nationalistic Europeans are not happy to view themselves as virgin (marketing) territory. General de Gaulle knew well that the UK provided a gateway to US expansion and industrial development in Europe. He spent many years fighting to exclude Britain from the EEC for this very reason. Luckily his negative influence on this matter, at least, did not prevail.

Business opportunities for overseas investment are exceptional in the UK. The eccentric monetarist economic policy of the Thatcher government has slimmed down UK industrial activity, leaving a lean and hungry workforce that includes a high level of technical expertise, either poorly paid or simply in search of new and better opportunities.

The pioneering overseas commercial entrepreneur is warmly received by the Department of Industry, which operates a highly efficient service called the Invest in Britain Bureau. This is specifically organised to help foreign companies set up operations in the UK.

The bureau controls seven regional offices with administrative expertise, ready and waiting to offer advice on office and manufacturing locations. It also provides information on labour and transport as well as the proximity of suppliers, details of incentive schemes, and the obvious aids that may be expected from government and public authorities.

Advice is also offered on the essential matters of power – gas, electricity, water and telecommunications – and the less essential but equally useful matter of finding business partners.

The trade unions in Britain, which have earned an unjustifiably bad reputation abroad, have mixed feelings about overseas investment in this country. Clearly it is desirable to encourage employment in the UK, and they recognise this. But some measures are known to disturb the unions.

The little matter of taxation of overseas investors has caused minor concern. Little or no tax is levelled at new investors so long as they continue to expand or invest, yet there is no restriction on the repatriation of profits. This may not have helped the agonised economy over recent months, but it is clearly a feature to take into account for those considering manufacturing, assembling or selling in the UK.

The healthy and open approach to overseas investment in the country has not always proved an unqualified success for the indigenous working population. An unfortunate example took place in July 1973 when Rockwell International, the major US electronics concern, decided to gain a foothold in the British calculator market by buying the UK company Sumlock Anita.

Sumlock Anita carried a badge of some historical significance; it was responsible for the world's first electronic calculator. Following the prototype produced by Kitts and Sparks in the late 1950s the first model was sold in 1964. Some ten years later the company had a staff of 1,500 with offices and service facilities across the country and a sizeable factory in Portsmouth.

A certain amount of sentiment was expressed about the historical significance of the acquisition, but little sentiment was spent on the entire workforce of the Portsmouth production facility and service engineers that were made redundant.

Rockwell wanted a UK base and an importing office to sell low-cost Japanese calculators. It achieved this end – and a great deal of ill-will into the bargain. Understandably not everybody welcomes US conglomerates into the UK particularly if they have conducted themselves in the same manner as Rockwell International, but as one trade unionist pointed out, many overseas manufacturers in the UK are better employers than the British.

Many of the major US computer manufacturers in the UK make model employers, although it is accepted that changing times may require drastic measures.

The NCR Corporation (once the National Cash Register Company) has grown and developed with the times, although the process has not always been entirely painless. Nearly all ex-NCR employees hold a great affection for the company, whatever the circumstances that led to their departure. In many cases the company has been compelled to slough off large numbers of staff due to changes in technology. Its survival and growth are a credit to its ingenuity, particularly in view of the discomfort or demise of so many of the cash register companies, including the UK's own Gross (now part of the Chubb empire).

NCR first arrived in the UK in 1885, some time before it moved into the computer market. In those early days a certain Liverpool hotel proprietor became the company's first UK cash register sales representative. Since then the concern has established a major manufacturing presence in Scotland along with many other leading computer companies, a list that includes both Honeywell and IBM.

IBM, like NCR, is known to be a good employer, although unlike NCR it has not suffered the extreme discomfort of changing from electro-mechanical to electronic machine production. This change in production methods necessitated large-scale redundancies in NCR. Indeed IBM must be seen in the UK as a prize example of stability and growth, and now boasts the title of being one of the major employers in the UK without official union recognition. This in itself is an indication of the considerable contentment shared by its own employees.

IBM began its UK operations on a small scale in modest premises in Berkeley Squarey Square, in 1951. There was a staff of six who shared a showroom with International Time Recording Ltd. In those early days it limited its sales operations to card punches, verifiers, sorters, collators and typewriters. Evidently the company recognised the benefits to be gained from manufacturing in the UK at an early stage. Within one year of setting up business in Britain a card production plant was operative in Harrow, and by 1954 the organisation was occupying its present manufacturing site at Greenock in Scotland.

Scotland is evidently an ideal place for manufacturing equipment, but with current government incentives and grant schemes there is potential for investment the length and breadth of the country.

A trade unionist expressed the belief that the UK is now recognised by the perspicacious international investor as an ideal environment for setting up a new venture, particularly for production.

Recently there has been increasing evidence of Japanese interest in the UK. British trade unions have viewed this interest with mixed feelings. The announcement of a major Japanese car company opening a large factory in Wales produced conflicting statements among trade unions. One union showed hearty approval, while the white collar division of the Amalgamated Union of Engineering Workers AUEW-TASS did not.

The Union's general secretary, Ken Gill, pointed out that such a scheme would bring little work to British designers. He also said that although the Japanese company had given assurances that they would use predominantly UK components, there were no guarantees to this effect.

TASS has made repeated attempts to protect indigenous British manufacturing interests, and drafted a strong recommendation to invest and support the UK electronics industry some six years ago.

For the overseas investor the contribution of the trade union is far from negative. Some of the more progressive organisations find union suggestions and recommendations on wage levels serve a practical use. Similarly the union can offer advice on management structuring and safety measures. Esso is reputed to enjoy good relations with its trade unions, and contrary to popular belief some of the friendly negotiations between ICL and its unions have produced practical benefits.

Overall the scope and potential of the UK market for the overseas investor is vast, particularly while there is no restriction on the repatriation of profits.

Despite the uncertainty of the UK economy, the financial policy of the present government excludes any adjustment to this measure . . . so manufacturing in the UK can prove a very profitable business.

COMPEC EUROPE PREVIEW—3

Ulf Gustavsen and Richard Norton explain how a Norwegian company cracked the UK minicomputer market

Norsk Data shows how to succeed in exports without being US-based


Part of the Norsk Data installation at the Dublin premises of Computer Enterprises, a bureau providing accountancy and management services to companies in the area. The installation includes an ND-10/S computer with two 75-megabyte disc drives.

THE exception, they say, proves the rule — and one thing Norsk Data has proved over the past ten years is that, contrary to popular belief, you don't have to be a US-based company to succeed in the international computer markets.

Earlier this month, at Hanover Fair, the company unveiled the ND-500 which is claimed to be the world's fastest 32-bit minicomputer. This from a company that still employs fewer than 700 people worldwide.

It is matters like this, and the fact that the company is firmly based in Europe, that has to a large extent determined how Norsk Data has approached its various markets.

Prior to 1967, Norway did not have a computer industry, although Norway has influenced the world computer industry in some surprising ways. Simula was created there, as was the Sibas database system. The two founders of CII-Honeywell-Bull were both Norwegian, and two other well-known figures in the computer industry, Ken Olsen and Gene Amdahl, have Norwegian ancestors.

Norsk Data was founded in Oslo in 1967, and today is one of the top ten minicomputer manufacturers in the world.

Norway has a population of four million which means a relatively small potential market for computers. Thus, a Norwegian computer manufacturer (or any other Norwegian company for that matter) tends to be export orientated. Around 50 per cent of Norsk Data's output is exported, mainly to the rest of Europe.

The UK is, and has always been, an important export market for Norwegian manufacturers, and is the second largest export market to Sweden. Yet it took Norsk Data ten years to start marketing in the UK. Why was this?

To a large extent it is the result of a major early success back in 1973 when CERN, the nuclear research organisation in Geneva, placed the first of a series of substantial orders for Norsk Data computers. The scale of this continuing contract had the effect of deflecting the company's attention away from the UK, and it was not until the late Seventies that the company seriously began selling into the UK. There are now more than 150 Norsk Data systems at CERN.

Although on the face of it there may be a language problem, the UK is an attractive market for Norwegian companies. Customs and attitudes are similar in the two countries, and the decision-making criteria are much the same, so there are minimal cultural barriers in business deals.

The language has not been a problem. English is the official language of Norsk Data, and all inter-company memos and communications are written in English.

The practicalities of business like the ease of telecommunications, and air transport, are relatively straightforward between the UK and Norway. Oslo is a 1¼-hour flight away from London, and there is never more than one hour difference in time zone between the two countries.

It was in 1977 that Norsk Data finally launched into the UK market, in a way perhaps different from the majority of companies with similar products. Treading cautiously, and aware that the name Norsk Data was totally unknown in the UK at that time, the company appointed a UK agent. This was a deliberate policy, followed in other export territories, which enabled Norsk Data to build upon the existing know-how of UK sales and support personnel.

Historically, Norsk Data has always been successful in the scientific and technological applications of computers. Apart from the CERN installations, for example, over 400 Norsk Data computers are in use as part of shipborne anti-collision systems; and the company, in 1977, won the contract to supply the computers for flight simulators for the American F-16 fighter plane.

So, in the UK, the first earnest selling was directed towards scientific and technological applications, where the company knew that the computers on offer from various suppliers would primarily be judged on technical grounds. It was an expansion route that the company knew well — a similar pattern had been followed in every export market.

Early successes, including a £750,000 contract to supply computers for the JET Joint European Torus project, and orders from the universities of Cambridge, Exeter and Reading, confirmed the wisdom of this approach to the UK market. By 1979, when total sales into the UK had exceeded £1¼m, the UK agent, Richard Norton (Nord) Ltd, was absorbed into Norsk Data and became Norsk Data Ltd.


Ulf Gustavsen is managing director of Norsk Data's UK subsidiary.

Norsk Data has never held to the strategy of concentrating massive resources in head office operations. In Norway, for example, there are eight or nine branch offices, each carrying out work that in many other companies would be concentrated at the head office.

In the UK, although the first sales operation (the agency) was based in central London, Newbury, in the Thames Valley, was chosen as the new headquarters, being strategically right for Norsk Data's spread of customer sites in the UK. It also made sense, because of its proximity to Heathrow. Experience in the few months since it began operation has shown that the working and living environment is better than in London, the workforce more stable, and as expected the fixed costs are far lower.

The company will probably establish a branch office in central London, and perhaps one in the Midlands or North.

The vast majority of the people based in Newbury are English, and this reflects Norsk Data's policy in export territories. The UK is a lower cost country than Norway, so there is a strong likelihood that the amount of software development and system integration carried out at Newbury will increase. Again, this is in line with Norsk Data's decentralisation policies.

Being a small company in comparison to some of the other computer manufacturers has been a mixed blessing. Users, particularly in the commercial sector, sometimes see this as a drawback. On the other hand, the company has found that many users prefer to deal with an organisation of about the same size as themselves, where most of the time they have direct access to software, systems and applications specialists, rather than being held at arm's length by highly polished salespeople, and overawed by the corporate size of their supplier.

The technical users which Norsk Data addressed first in the UK were primarily interested in looking at the performance of the hardware and software, so to them the company's size was never a major talking point.

The commercial user base for Norsk Data computer systems has grown slowly, but is now gathering momentum in the UK — again following the pattern of other countries.

A sure sign that Norsk Data's presence in the UK is being noticed is the fact that it is being approached by more software houses interested in becoming OEM systems houses, and helping the company develop future software. In general, Norsk Data aims primarily for end user sales, but could soon be looking for good OEM systems houses in the UK.

Growth of any sort can bring problems, and one of Norsk Data's priorities has been to sustain the enthusiasm and dedication that characterised the company's employees in the early days. The commitment to decentralisation helps, and individuals are given considerable freedom and responsibility.

In the UK Norsk Data is trying to maintain this pattern, and it seems to work well, although it takes some time for UK employees to get used to the fact that the company expects them to take the initiative and solve problems for themselves.

A key question for Norsk Data is its ability to fight off competition from mostly bigger computer companies. It considers that the European origins of the company are more of an advantage than a disadvantage, and the F-16 contract, for instance, confirmed that it can take on the big American companies and beat them even on their own territory.

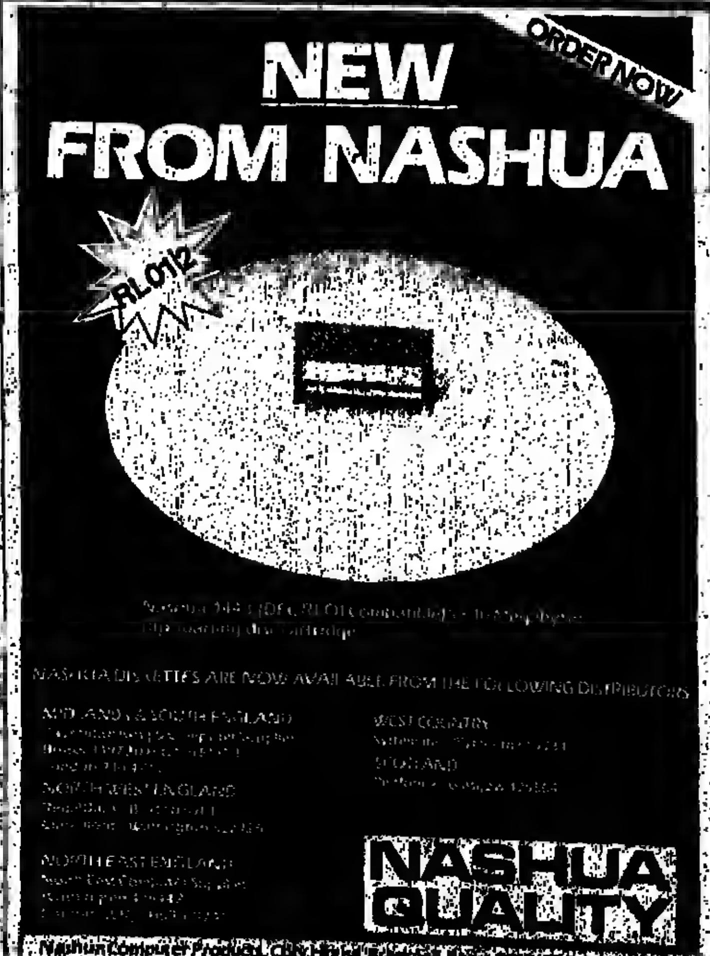
The UK is just one of the European export markets, and each has different national practices, languages and requirements, posing a diverse set of problems for the computer supplier. As a European-based manufacturer, Norsk Data considers that it is in an ideal position to develop systems that can take these differences into account with the majority of R&D people based in Europe.

It was largely European users who prompted the development of multi-mode operating system, and it is interesting to note that between 1970 and 1977, when most American companies were developing three different kinds of operating system for minicomputers, Norsk Data had already developed a single operating system that would allow the simultaneous use of multilingual time sharing, real time, and both local and remote batch work. This system (Sintran III) had been launched in 1975.

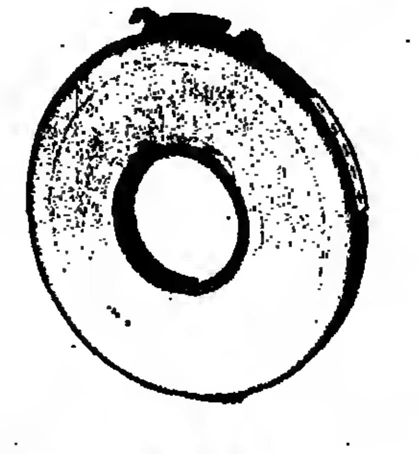
Again, the European users demanded more modern languages than Cobol and Fortran, and this placed extra demands on the operating systems, another reason why Europe has been the source of languages like Algol, Pascal, Coral 66 and Pearl.

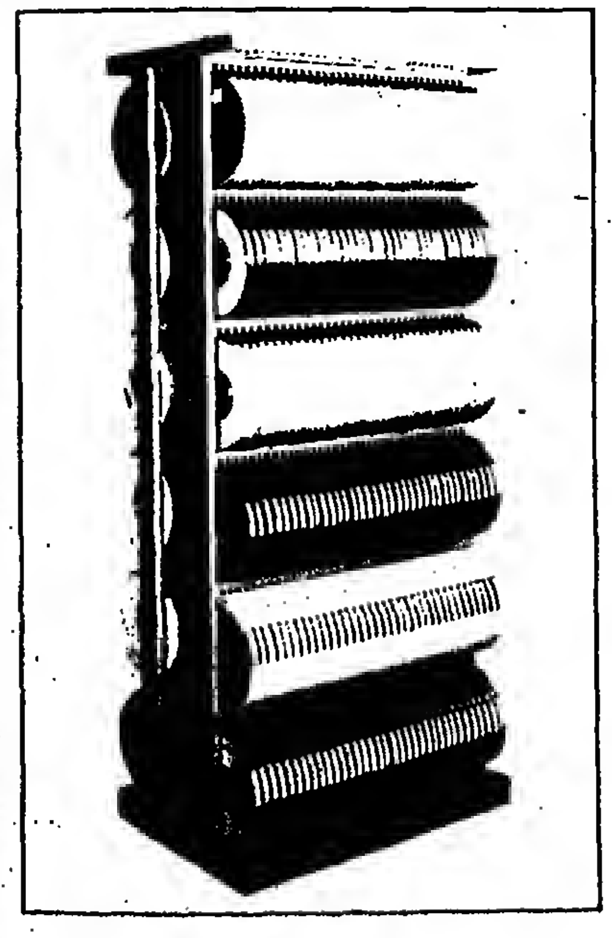
Although Norsk Data entered the UK market with some delay, the UK and Germany have been identified as the major growth markets for the company over the next few years. The target is for an annual growth rate in the UK in excess of 40 per cent, and the signs are that this is not unrealistic.

Among the commercial Norsk Data users in the UK are the Pitman Press, and two computer bureaux. With a new ND-100 package specifically tailored for commercial users just launched, and the powerful ND-500 coming along soon, Norsk Data is in a good position to continue its expansion in the UK.



1981 Wright Line Squash Tournament





CONGRATULATIONS TO ALL FIRST ROUND WINNERS

HOPE TO SEE THE LOSERS AGAIN NEXT TIME

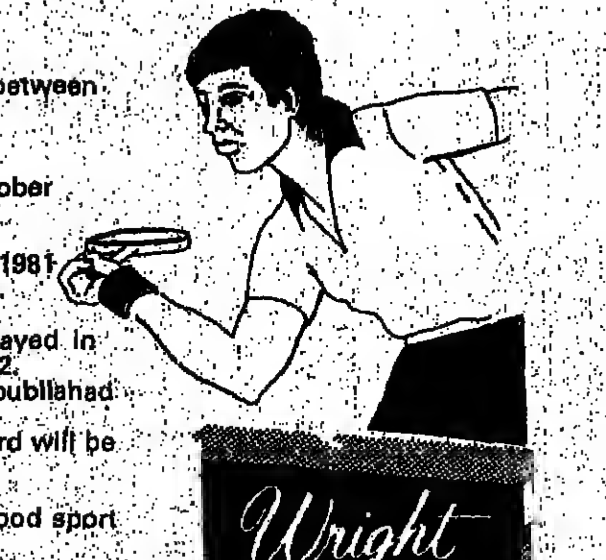
Draw For Round Two

AREA 1			
1.	Northern Star Ins Co. Ltd. Croydon	v	The London Life Association (Team A)
2.	Woodhouse Drake & Carey (EC3)	v	Centrenao Services Ltd (E15)
3.	The London Hospital (E1)	v	Police National Computer Unit (SW1)
4.	SW Thames Regional Health Authority (SW17)	v	Co-op Microproducts (WC1)
5.	Gestetner Limited (N17)	v	Cap London Limited (WC1)
6.	Wimpey Group Services (W6)	v	V A Howe & Co. (SW6)
7.	BUPA (WC2) (Team A)	v	Alexanders Discount Co Ltd. (EC4)
8.	Thames Polytechnic (SE18)	v	Swiss Bank Corp (EC2)
9.	Gratispool Int. Holdings Feltham	v	Grundy (Ted) Ltd. Teddington
10.	Sterling-Winthrop Surbiton	v	The London Life Association (Team C)
11.	Church Commissioners (SW1)	v	Davy McKee (Oil Chemicals) (W1) (Team A)
12.	Nat. West. Bank, Beckenham	v	Sperry Univac (EC1)
13.	Roxburghe International Hounslow	v	Prime Computers (UK) Hounslow (Team A)
14.	Imperial Chemical Industries (SW1)	v	Davy McKee (Oil Chemicals) (Team B) (W1)
15.	Prime Computers (UK) Ltd Hounslow (Team B)	v	Data Logic, Greenford
16.	Gallaher Ltd. Northolt	v	United Dairies (W12)
17.	London Borough of Barnet Hendon	v	Hill Samuel (EC2)
18.	Lloyds Bank (SE1)	v	Colgate Palmolive (W1)
19.	Bankers Automated Clearing Services, Edgware	v	European Communications Consultants (N1)
20.	Post Office Data Proc. Executive (EC1)	v	Thomson McLintock & Co. (EC2)
21.	Bank of England (EC4)	v	P-O-Prestel (E11)
22.	Systemsolve, Bunbury	v	Allied Suppliers, Hayes
23.	London Transport Executive (W1)	v	United Friendly Insurance Co. Ltd. (SE1)
24.	Hartley Cooper Services Ltd. Enfield	v	Beres Group Limited (N20) (a)
25.	A. Guiness (NW10)	v	R. White & Sons Ltd
26.	ITT-IDEC (N20)	v	Bank of Baroda (EC2)
27.	Courage Ltd. (W3)	v	Honeywell Info Systems Ltd. (Team B) Slough
28.	R.A.C.S. Ltd. (SE18)	v	Altergo (WC1)
AREA 2			
29.	East Sussex County Council Lewes	v	Grand Metropolitan Systems Brighton
30.	Gateway Building Soc. Worthing	v	ITT-SSG, Brighton
31.	Proprietary Perfumes (Int) Ltd. Ashford	v	European Ferries Ltd. Dover
32.	Grieveson Grant & Co. Tunbridge Wells	v	IPC Bus. Press Ltd. Haywards Heath
33.	Cranfield Computer Services Welling	v	Naval Base Computer Bureau Chatham
34.	The Wellcome Foundation Ltd. Dartford	v	Woolwich Equitable Building Society, Bexleyheath
35.	ITT SSG Ltd. Orpington	v	Coates Brothers & Co. Ltd. St. Mary's Cray
36.	Segas, Croydon (Team A)	v	J. Windsor, Wallington
37.	Bank of America, Whyteleafe	v	Air Products Ltd. New Malden
38.	Commercial Union, Whyteleafe	v	Legal & General Ass. Soc. Tadworth
39.	British Olivetti, Haslemere	v	Surrey County Council, Epsom
40.	British Aerospace, Kingston	v	Systems Designers Ltd Camberley
AREA 3			
41.	Honeywell Info Systems Ltd. Slough (A)	v	Perkin Elmer, Slough
42.	Leslie & Godwin Ltd Farnborough	v	SDC Datasolve Ltd. Sunbury (Team A)
43.	Software Sciences Ltd. Farnborough	v	SDC Datasolve Ltd Sunbury (Team B)
44.	Meat & Livestock Commission Milton Keynes	v	Milton Keynes Development Corp
45.	Oxfordshire County Council	v	County Computers, Oxford
46.	Cunard Steamship Co. Ltd. Southampton	v	International Computers Ltd Southampton
47.	Thorn Domestic Appliances Havant	v	Sperry Vickers, Havant
48.	IBM UK Labs Ltd. Winchester	v	Wiggins Teape Ltd. Basingstoke
49.	University of Reading	v	Racal Electronics, Wokingham
50.	Tempo Computer Services Ltd. (W1)	v	Perkin Elmer, Beaconsfield
51.	Bowmaker, Bournemouth	v	British Hovercraft Corp Isle of Wight (Team A)
AREA 4			
52.	London & Manchester Assurance Exeter (Team B)	v	Compair Construction & Mining Ltd. Cornwall
53.	Barclays Bank Ltd. Poole	v	Abbey Life Ass. Co. Ltd. Bournemouth
54.	Purnell & Sons Ltd. Bristol	v	London & Manchester Ass. Exeter (Team A)
55.	Hambro Life Ass. Ltd. Swindon (Team A)	v	Burmah-Castrol Co. Swindon (Team A)
56.	Hambro Life Ass. Ltd. Swindon (Team B)	v	Dowty Group Service Ltd. Cheltenham
57.	Ecclesiastical Insurance Office, Glos.	v	Gloucestershire County Council
58.	Phoenix Ass. Co. Ltd. Bristol (Team B)	v	C.E.G.B. SW Region, Bristol
59.	British Aerospace, Bristol	v	Sunlife Ass. Bristol
60.	Bristol United Press Ltd.	v	Phoenix Ass. Co. Ltd. Bristol (Team A)
61.	Tenneco Chemicals Europe Ltd.	v	Phoenix Ass. Co. Ltd. Bristol (Team C)
62.	Dowty Mining Equipment Ltd. Tewkesbury	v	Metal Box, Worcester
AREA 5			
63.	Bowyer & Kinlone (Caterers) Ltd. Luton	v	SKF UK Ltd. Luton
64.	Tesco Stores, Cheshunt (Team A)	v	International Computers, Stevenage
65.	Tesco Stores, Cheshunt (Team B)	v	Ford Motor Company, London
66.	Sanyo Marubeni (UK) Ltd. Watford	v	GEC Computers Ltd Borehamwood, Rickmansworth
67.	Computer & Systems Engineering Ltd. Rickmansworth (Team B)	v	Computer Technology Ltd. Hemel Hempstead
68.	Marconi Instruments, St. Albans	v	Honeywell, Hemel Hempstead
69	Beagram (UK) Ltd. Dunstable	v	Granada Group Services, Bedford
70	Fisons Ltd. Felixstowe	v	Danepak Ltd Thetford
71	Norwich Union Ins Group	v	Boulton & Paul Ltd Norwich
72	Perkins Engines, Peterborough	v	Philips Industries Cambridge
73	Essex Water Company, Romford	v	May & Baker Ltd Dagenham
AREA 6			
74	Terminal Data Processing Coventry	v	M.I.R.A. Nuneaton
75.	Fisons Ltd Loughborough	v	Rank Taylor Hobson, Leicester
76.	Associated British Maltsters Ltd Newark	v	Leisure Kitchen Products Long Eaton
77.	Rolls-Royce, Derby	v	Grants of St James's, Derby
78.	Tungstone Batteries, Market Harborough	v	Cummins, Daventry
79.	Avon Cosmetics Ltd. Northampton	v	British Timken, Northampton
80	Robert Horne, Northampton (Team B)	v	Weatherbys, Wellingborough (Team A)
81.	Norprint, Boston	v	John Langdon, Lincoln
AREA 7			
82.	Royal Doulton Tableware Ltd. Stoke-on-Trent	v	Serck AUDCO Valves, Newport
83.	GKN, Warley	v	Serck Services, Redditch
84.	Severn Trent Water Authority Sheldon (Team B)	v	Massey-Ferguson, Coventry (Team B)
85.	N.B.C. Computer Services Ltd. Edgbaston	v	Severn Trent Water Authority Sheldon (Team C)
86.	Britannic Assurance Co. Ltd. Birmingham	v	Severn Trent Water Authority Sheldon (Team A)
87.	Sperry Univac (Midlands) Ltd. Birmingham	v	Newey & Eyre, Edgbaston
88.	W & T Avery Ltd. Walsall	v	Aygooglass (Midlands) Ltd. Erdington
89.	Dero Systems Services Ltd. Warley	v	Worcester Royal Porcelain Co. Ltd. Worcester
90.	GKN Group Man Services Ltd. Smethwick	v	Safe Computing Ltd West Bromwich
AREA 8			
91.	Barclays Bank, Knutsford	v	I.C.L. Crewe
92	Inland Revenue Liverpool Computer Services	v	Wm. Rainford (Holdings) Liverpool
93.	The Littlewoods Org. Liverpool	v	Barker & Dobson, Liverpool
94.	Refuge Assurance Co. Ltd. Manchester	v	Centre File (Northern) Ltd. Manchester (Team [illegible])
95.	University of Lancaster	v	West Cumberland Farmers Ltd Cumbria
96.	Leyland Vehicles Ltd. Leyland	v	British Aerospace, Bolton
97.	TSB Computer Services Ltd. Manchester	v	North West Gas, Altrincham
98.	Tameside M.B.C., Stalybridge	v	Simon Engineering Ltd Stockport
99.	F. W. Woolworth & Co. Rochdale	v	Int. Computers Ltd, Manchester
100	Lancashire County Council Preston	v	BDP Computing Service, Preston
101.	Greater Manchester Transport Ardwick	v	City of Salford, Manchester
102.	English Sewing Ltd. Manchester (Team B)	v	J. Hepworth & Sons, Leeds
103.	GMC County Engineers Manchester	v	Colgate Palmolive, Salford
104.	Ward & Goldstone Ltd Salford	v	Brossley Estates Ltd Leigh, Lancs (Team B)
AREA 9			
105.	Midland Bank, Sheffield	v	Sheffield Twist Drill & Steel Co Sheffield
106.	Rowntree Mackintosh, York (Team B)	v	CEGB NE Region HQ, Harrogate
107.	Rowntree Mackintosh, York (Team A)	v	Automatic Information Management, Hull
108.	PMSL Computer Services, Halifax (Team B)	v	Grattan Warehouses Ltd Bradford
109.	Yorkshire Water Authority Bradford	v	PMSL Computer Services, Halifax (Team A)
110.	Philidas Ltd. Pontefract	v	Compower Ltd. Doncaster
111.	E. J. Arnold & Sons Ltd. Leeds	v	Leeds Permanent Building Soc. (Team A)
112.	Data Sciences Int. Ltd. Leeds	v	Lyons Bakery Ltd. Barnsley
AREA 10			
113.	British Steel Corporation Redcar	v	O J B Engineering Co Durham
114.	Gateshead M.B.C.	v	Vickers Management Services Newcastle
115.	Underground Mining Machinery Co Durham (Team A)	v	Ferscorp (UK) Ltd. Newton Aycliffe
116.	Flymo Ltd. Co. Durham	v	D.E.B. Darlington (Team C)
117.	University of Newcastle Computing Lab.	v	University of Edinburgh
AREA 11			
118.	DVLC, Swansea	v	Royal Mint, Glamorgan
119.	Cardiff Joint Computing Centre	v	South Wales Electricity Board Cardiff
120.	Exports Credit Guarantee Department, Cardiff	v	Ferranti Ltd. Cwmbran (Team A)
AREA 12			
121.	Shell Exploration & Production, Aberdeen (Team C)	v	N.O.S.H.E.B., Aberdeen
122.	Shell Exploration & Production, Aberdeen (Team B)	v	BP Petroleum Development Aberdeen (Team A)
123.	Leyland Vehicles Ltd. West Lothian	v	Cape Insulation Ltd. Stirling
124.	Inland Revenue, Glasgow (Team A)	v	Chivas Brothers, Paisley
125.	British National Oil Corporation, Glasgow	v	Dept. for National Savings Glasgow
126.	Edinburgh Regional Computer Centre	v	General Accident Insurance Co. Ltd. Perth
127.	Post Office D.P.E. Edinburgh	v	Ferranti Ltd. Edinburgh
128.	Bank of Scotland, Edinburgh	v	Scottish Widows Fund & Life Ass. Co. (Team A) Edinburgh

The following rounds must be played between these dates.
ROUND Two, 1st May-15th June
ROUND Three, 1st-31st July
ROUND Four, 15th September-15th October
ROUND Five, 1st-10th November
ROUND Six, 20th-30th November
QUARTER-FINALS, 7th-15th December, 1981
Note: All the above dates are inclusive.

The SEMI-FINALS and FINAL will be played in London on 15th and 16th January, 1982.
The draw for the THIRD ROUND will be published towards the end of June.
The draw for the FOURTH ROUND onward will be published early in September.

All players and supporters are wished good sport and good luck.



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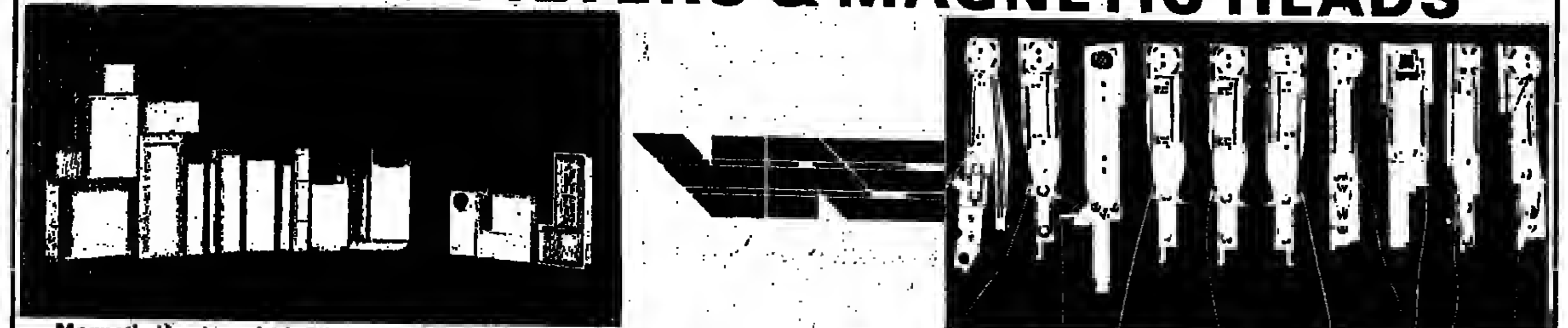

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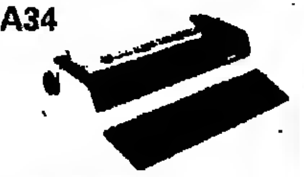

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COMPUTASTARS

Sponsored by Computer Weekly and Wright Air Conditioning

Teams brave 'Siberian' climate for Midlands heat of Computastars

by Chris Youett

MOTORING through Siberian storms of sleet and hail, the men of BL Systems and women of Scicon Computer Services won the Midlands heat of Computastars on Saturday.

In conditions which caused organiser Gordon Cairns hastily to re-write his programme to allow more events to be held indoors in the gym at the New Alexander Stadium, Perry Bar, Birmingham, BL Systems had to wait until the last of eight contests to clinch victory.

Originally scheduled to be the traditional steeplechase, the last race was converted to a 400 metres sprint and won by Viv Oliver of Safe Computing who recorded the fastest time. But BL's position of second was enough to ensure victory for the men's team and passage to the finals.

Events for the men were putting the shot, kicking and running relay rugby, long jump from the standing position, bench jumps, 500 metres relay, dribbling a soccer ball, vaulting over a bench and 400 metres sprint.

Second place in the men's team events went to the Open University, while Kalamazoo came third. Both teams are new to the competition.

In the men's individual competition, which is entered by the number one competitor from each team, first place was won by Dave Alckna of BL Systems, whose all-round performance was a key element in his team's success. Second went to Jeff Harrison of Kalamazoo and third to Jim Morrison of Open University.

Last year's UK national men's individual champion, Viv Oliver of Safe Computing, could only come fifth, due to a disappointing team performance in the rugby relay.

The women competed in putting the shot, darts, the standing long jump, bench jumps, 500 metres relay, dribbling a hockey ball, vaulting over a bench and a 400 metres sprint.

The team event was won by Scicon Computer Services, which came third in the national finals of the first Computastars held three years ago.

Second came Kalamazoo and third was Thorn-EMI. All three go through to the finals.

The individual prize for women was taken by Carolyn Bryce of Thorn-EMI at Telford from Del Lakin-Hall of Kalamazoo and Diane Baldwin of Scicon who were joint second.

Afterwards, trophies were presented to the top teams and individuals by John Colling, managing director of Wright Air Conditioning (Midlands).

Commenting on the day, organiser Gordon Cairns paid tribute to the competitors and voluntary marshals who endured freezing conditions to make the heats a success.

"It was a tremendous trial for competitors to compete in such adverse conditions. It astounded me that once the competition started, not one team pulled out," he said.

Results were compiled on a Commodore 8032 Pet, with software provided by BSO Automation Technology of Holland.

Lorna Ackers (left) and Jean Eyre of Scicon Computer Services in the bench jumps help their team to overall victory

Results

Men's team results

Rank	Name	Scores								Total
1	B. L. Systems	35	45	31	31	45	31	35	26	279
2	Open University	22	42	23	33	42	41	39	27	269
3	Mettoy	32	33	23	29	45	32	32	25	251
4	Kalamazoo	24	24	24	32	45	37	35	27	248
5	IBM	24	27	24	30	36	37	27	26	231
6	Safe Computing	30	3	30	25	45	31	35	31	230
7	Metal Box	26	39	18	21	36	34	25	19	218
8	Management Control S	24	3	16	38	36	33	37	23	210
9	Rank Xerox	22	15	14	33	24	31	38	22	199
10	Systems Resources	22	18	26	24	36	33	32	0	191
11	Sketchley	23	24	13	27	27	26	26	18	184
12	Scicon Comp Services	12	21	16	20	27	40	27	9	172
13	Compact 3000 Systems	23	6	14	23	30	35	26	13	170
14	Midland Household	21	3	15	28	24	20	27	4	142
15	Sandvik	9	27	10	16	3	31	24	7	127
16	Unilever	15	3	16	21	3	9	15	5	87

Men's individual results

Rank	Name	Scores								Total
1	Dave Alenka (BL Systems)	14	15	9	13	15	13	13	7	99
2	Jeff Harrison (Kalamazoo)	14	8	13	12	15	13	13	9	97
3	Jim Morrison (Open University)	7	14	7	12	14	15	13	8	90
4	Martin Pearce (Mettoy)	11	11	11	9	15	12	9	9	87
5	Vivian Oliver (Safe Computing)	13	1	15	8	15	8	10	12	82
6	Norman Macleod (Metal Box)	7	13	6	9	12	13	8	8	76
7	Bill Ormerod (Sketchley)	6	8	7	11	9	11	13	9	74
8	Dave Wortley (IBM)	7	9	6	10	12	14	8	6	72
9	Jerry Purkis (Rank Xerox)	11	5	6	10	8	9	13	9	71
10	Keith Cheeseman (Systems Resources)	10	6	9	8	12	12	12	0	69
11	Bill Dowie (Compact 3000 S)	10	2	5	9	10	13	10	8	67
12	Paul Woodfinder (Mgment Control)	6	1	3	14	12	9	12	5	62
13	Frank Smith (Scicon)	8	7	5	6	9	14	8	4	61
14	Steve Dawson (Midland Household)	8	1	6	8	8	1	11	1	44
15	Thomas Willetts (Sandvik)	5	9	4	8	1	8	6	1	42
16	Ben Friman (Unilever)	6	1	4	6	1	4	2	1	25

Scores are given in order of events, which were: putting the shot, rugby relay, long jump, bench jumps, 500 metres relay, dribbling a soccer ball, vaulting over a bench and 400 metres sprint.

Women's team results

Rank	Team	Scores								Total
1	Scicon	27	27	36	30	33	20	32	39	244
2	Kalamazoo	25	27	36	26	33	24	24	40	235
3	Thorn-EMI	22	33	25	31	27	26	22	37	223
4	Metal Box	20	30	11	22	3	24	26	14	150
5	BL Systems	23	33	24	23	3	20	7	15	148

What happens next . . .

COMPUTASTARS is the sports event sponsored by Computer Weekly and Wright Air Conditioning for teams from computer user, manufacturing and service companies throughout the country.

The Midlands heats are the first of four regional contests, from each of which teams will win their way to the finals to be held at the Alexander Stadium on July 26.

The other three heats are: North London at Barnet on Saturday, May 16; South London at Crawley on Sunday, May 31; and Northern at Cleckheaton, near Bradford, on Saturday, June 6.

The top men's and women's teams will join last year's winners Midland Household Stores (men) and Legal & General (women) respectively in the finals.

The top individuals will join last year's champions Viv Oliver of Safe Computing and Bridget Cuthill of Legal & General and Lucy Balaes of United Biscuits, joint women champions in 1980.

The top three male and female teams at Birmingham will earn the right to compete in Holland, meeting winners of the similar Dutch event for the European final at Hengelo on Saturday, September 5.

For any further details on Computastars contact organiser Gordon Cairns at Computastars Ltd, Tel: 01-668 6690.

Those taking part

THE first named in each team also entered the individual event. Captains are denoted by an asterisk.

MEN

BL Systems. Dave Alckna, Joe Lewis*, Mike Bord, Martin Vils and Dave Richards.

Compact 3000 Systems. Bill Dowie, Eugene Tucker*, Neil Follett, Don Youren and Stuart Phibbs.

IBM. Dave Wortley, Mike Davidson*, Dave Thomas, Clive Moore and Neal Mitchell.

Kalamazoo. Jeff Harrison, Richard Jephcott, Phil Wright, John Wakelam and Ron Castle.

Management Control Systems. Paul Woodfinden, Mike Sharman, Steve Waddington* and John Bonser.

Metal Box. Norman Macleod, Cass Castello*, Charlie Biggs, Nigel Weaver and John Wyane.

Mettoy. Martin Pearce*, Loy Byans, Ian James, Andy Smith.

Midland Household Stores. Steve Dawson, Simon Randall*, Neil Britton, Brian Rigby and Andrew Thompson.

Open University. Jim Morrison, Charles Kendall, Chris Slack, Bill McEwan* and Nick Collins.

Rank Xerox. Jerry Purkis, David Musson*, Mike Sullivan, Moray Hogg and Hamid Lane.

Safe Computing. Viv Oliver, Stewart Murray, Bob Elkin*, Peter East and Bryan Neal.

Sandvik. Thomas Willetts, Paul Yeomans, Dave Jarvis, Andrew Croydon and Paul McHale*.

Scicon Computer Services. Frank Smith, Steve Bedford, Steve Wickham, Peter Gray* and Brian Hadfield.

Sketchley. Bill Ormerod, Steve Cox, Brian Dewis*, Alan Grieves and John Booton.

System Resources. Keith Cheeseman, Mike Stone*, Dave Edwards, John Heather and Dave White.

Unilever. Ben Friman, Ian Wilson, Don Page*, Andy Shaw and Dave Smith.

WOMEN

BL Systems. Janice Smith, Janet Boardman, Linda Morrell*, Jill Farnell and Linda Richards.

Kalamazoo: Del Lakin-Hall, Alison Grant, Chris Athersuch*, Sue Wright and Julie Davis.

Metal Box: Jaqui Read, Eileen Adamson*, Ann Leadley, Denise Baker and Mary Lewis.

Scicon Computer Services: Diane Baldwin*, Lorna Ackers, Jean Eyre, Sue Whitman and Linda Hill.

Thorn-EMI (Telford): Carolyn Brice, Debra Howcroft, Corinne Everett, Elizabeth Meakin and Jill Walker*.

Women's individual results

Rank	Name	Scores								Total
1	Carolyn Brice (Thorn-EMI)	7	11	11	13	9	10	10	12	85
	Del Lakin-Hall (Kalamazoo)	6	9	15	9	11	9	11	12	82
2	Diane Baldwin (Scicon)	7	9	12	12	11	8	10	13	82
	Jaqui Read (Metal Box)	6	10	5	12	1	9	10	10	63
4	Janice Smith (BL Systems)	10	11	11	12	1	9	4	6	63

Scores are given in order of events, which were: putting the shot, darts, long jump, bench jumps, 500 metres relay, dribbling a hockey ball, vaulting over a bench and 400 metres sprint.

Denise Baker of Metal Box in the long jump

Running round an obstacle course with a rugby ball on a treacherous [illegible] Unilever captain Don Page skids round a marker.

Strenuous light relief

THIS year, the serious business of Computastars is supplemented by the not quite so serious — but just as energetic — Computarug.

The five-person teams hanging on the end of a rope pulled three times against their competitors. In a clean sweep, BL systems added a tug-of-war victory to their team event victory, by beating Kalamazoo and winning through to the national finals.

In the women's event, only two teams entered and BL Systems lost to Gloucestershire County Council. The teams opted to use this event as a "warm up" for the finals, and so will meet again.

Appointments Appointments Appointments

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(6325)

JORDANHILL COLLEGE OF EDUCATION, GLASGOW

The Governors invite applications from suitably qualified and experienced persons for the post of

LECTURER IN COMPUTER EDUCATION

The Computer Education Department provides pre-service and in-service courses for teachers, including a CNAA validated diploma course jointly with Paisley College, and operates a computing service to the College and to schools in the west of Scotland.

It is hoped to make two appointments, and these will be from 1st September 1981, or such date as may be mutually agreed.

The salary scale is £8,399 to £12,012 with 16 points, and increments of £400 approximately. The point at which successful applicants will be placed on the scale will be determined in relation to their salary at the time of appointment.

Further particulars and forms of application may be obtained from the PRINCIPAL, JORDANHILL COLLEGE OF EDUCATION, SOUTHBRAE DRIVE, GLASGOW G13 1PP. Completed forms should be returned not later than Monday 11th May, 1981.

(6316)

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Being one of the most stable and pleasant countries in Central Africa, Malawi offers an appealing way of life for the expatriate family.

A major financial institution is carrying out a significant advancement of its data processing facilities by the implementation of on-line systems with remote office access based upon NCR 8250 mini computers.

Our client now wishes to appoint a sound, all round DP specialist for the next phase of development; upgrading to an NCR 8270 with more terminals and additional applications. The person appointed will work closely with the present expatriate manager who has successfully taken the project to its current level.

Applications are invited from people who have a solid DP career covering operations and systems with some supervisory experience but must be competent in COBOL programming in an NCR 8200 or similar environment. Knowledge of CTME and/or IMOS software will be most beneficial, whilst financial sector experience would be useful.

The appointment is for 2½ years and provides considerable benefits including:

- *Free, modern furnished housing*
- *25% of total earnings terminal bonus (tax free)*
- *Allowances and fares for childrens' education in UK if required*
- *Company car*
- *Terminal leave bonus, club membership etc.*

This is a very attractive opportunity with an organisation holding considerable standing in an appealing country. Please contact us immediately as client interviews will be arranged in London in the near future. Telephone or write, quoting ref: CW 112-1C.

CAPP ASSOCIATES
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Capp House, 96 South End,
Croydon CR9 3SD
Computer and Professional Personnel Consultants

5287

Regional Data Centre Managers

c.£14,500 + car
Cheltenham, Luton, Sheffield

Whitbread are one of Britain's top brewing groups, operating their breweries, distilleries and retail outlets through regional trading companies.

To provide a powerful new information retrieval, management and processing service for the entire organisation, a new Management Services facility is being established. This venture represents a £5½ million investment in a distributed network based on seven IBM 4341 mainframes, 400 VDU's and 60 printers.

Data Centres are being established in Cheltenham, Luton and Sheffield, each with equipment valued at £1.5 million and a staff of 20-25. Each of the managers sought will be responsible to the Group Operations Controller for the regional service provided.

Crucial tasks include the recruitment and development of staff, the development, planning and organisation of hardware changes, and the monitoring of user satisfaction through regular reviews and frequent visits to trading companies.

To match the job profile, you should preferably be educated to degree or equivalent level, with at least eight years' experience in Management Services – most of this in a discipline relating directly to the job – and able to demonstrate success as manager and motivator of a technical team. Confident administration of a critical work programme is essential.

Salaries negotiable in the region of £14,500 will be accompanied by a first-class benefits package which includes a company car and a generous relocation package where applicable. These positions are open to men and women.

For an application form, please phone or write to Pauline Pryor, Recruitment Administrator, Whitbread & Company Limited, Chiswell Street, London EC1Y 4SD. Telephone 01-606 4455. Please quote reference HQ/34.

(5228)

WHITBREAD

Sales Engineers

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Now established as a permanent feature of Britain's data communications scene, Codex (U.K.) is expanding its existing sales team to cope with increasing demand for Codex-bred know-how and products.

In its field, the Company is a world leader, marketing a comprehensive, integrated range of products from modems through to distributed communications processors based on the latest technology.

The Sales Engineers appointed will advise prospects on enhancing existing systems and developing new ones, and will sell the products required to implement their recommendations.

Successful selling experience, either in data communications or in related fields such as telecommunications and computer peripherals, is essential. Field and in-house familiarisation training will be provided, as necessary. Vital attributes are determination, get-up-and-go, attention to detail and a thoroughly professional attitude.

Salary plus commission produce on-quote earnings of £14k. The Company also provides a car, free BUPA, life assurance, income continuation plan and non-contributory pension scheme – plus relocation assistance, where necessary.

For an application form, telephone or write to Sue Sewerin at Codex (U.K.) Limited, 105/107 Lansdowne Road, Croydon CR0 2BN. Telephone 01-680 8507.

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UNIVERSITY OF BRADFORD
COMPUTER CENTRE
Computer Officer Posts

Applications are invited from graduates and/or professionally-qualified persons for posts in the Computer Centre which provides a central service for research and teaching within the University. A large twin CYBER 170/720 system is at present being installed and the service greatly expanded.

SENIOR COMPUTER OFFICER (Ref. SCO/CW)

Heads a team of Computer Officers concerned with User Services providing advice, instruction, documentation and liaison within the University and regional centres. The post is a key one and requires supervisory experience. Salary on Scale £8515-£12860 p.a.

COMPUTER OFFICERS (Ref: CO/CW)

Programming experience is necessary and areas of specialist interest required include PDP-11 computers and UNIX software, Communications, Microprocessors, but applicants are invited to offer other expertise for consideration. A post with temporary one-year establishment will be offered but there may be possibility additionally to appoint on a permanent basis. Salary on scale £6070-£10575 p.a.

Application forms and further particulars are available from the Personnel Officer, University of Bradford, Richmond Road, Bradford, West Yorkshire, BD7 1DP.

(5356)

Current and Forthcoming Positions – Contract and Permanent

IBM 4331 Cobol/Assembler Prog/Analyst	Manchester
ICL 2900 Cobol IDMS Programmers	Middle East
Honeywell L6 Programmer	London/USA
ICL 2900 Cobol Programmers	Various locations
ICL 2900 VME/B Support Staff	Various locations
ICL 2904 Cobol Programmer	Manchester
ICL 2904 Cobol Analyst/Programmer	Manchester
IBM VM 370 Commercial Fortran Programmer	Holland
IBM VM 370 Systems Programmers CICS/DOS/VSE CMS	London

Please contact Vic Heaney

NESCO NES Computer Services

5 Springfield Road, Altrincham, Cheshire WA14 1HE
Telephone 061-941 4787

(5329)

WESTFIELD COLLEGE
(University of London)

COMPUTER OPERATORS

The College Computer Unit wants two additional operators (men or women) for running a new Prime P750 system.

Previous operating experience is not essential.

Salary within the range £3956 to £6059 including £967 London Weighting Allowance, dependent on age and experience.

Further details and application forms from the Personnel Office (CW), Westfield College, Kidderpore Avenue, London NW3 7ST, or telephone 01-435 7141 Ext. 404.

(5317)

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university college of swansea

Lecturer
(Re-advertisement)

Applications are invited for a Lectureship in the Department of Computer Science. Candidates should have a first- or good second-class honours degree in mathematics, computer science, or closely related subject together with substantial postgraduate research experience. Applications will be welcome from candidates with research interests in any area of computer science.

The appointment will date from 1 September, 1981, and will be made at the lower end of the salary scale £6,070-£12,860 per annum.

Further particulars and application forms may be obtained from the Personnel Officer, University College of Swansea, Singleton Park, Swansea, SA2 8PP, to which office they should be returned [illegible]

As applicants from the first advertisement will automatically be considered, there is no need to reapply.

(5121)

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LONDON WC2E 7HE

(5307)

JBA

Analyst/Programmer

Berks **to £11,000**

A large international manufacturing company is expanding its European operations and wishes to recruit an experienced professional.
Applicants must have several years IBM SYS34 and RPG II experience having worked on general commercial applications.
It is expected that successful candidates will move into a co-ordination consultancy role involving European travel. **Contact: Brian Postles**

Software Designer

Near Oxford **c. £10,000**

This young manufacturing organisation of professional computer controlled recording equipment for sound studios and broadcasting, has rapidly established itself as the leading innovator in its field. The software content of its systems is always increasing and will have a central place in the structure and ergonomics of future designs.
The Company's expansion means that they now have a vacancy for a Software Designer with proven analytical skills and who has a specific interest in applying computer control to help make machines more usable and effective.
Applicants should have experience in real-time control using mini or micro computers and should enjoy working in an independent fashion. Added advantages would be a working knowledge of an ASSEMBLER language and of multi-processor systems.
The Company expects to continue its rate of progress and there will always be opportunities for the future career of the successful applicant. **Contact: David Hendry**

Programmers & Analyst/Programmers

London **£8,500 – £11,000**

Our client, an expanding consultancy is looking for a number of experienced Programmers and Analyst/Programmers to design and develop commercial turnkey systems.
Applicants should have at least two years BASIC or COBOL plus the ability to deal effectively with clients and solve problems with minimum supervision.
Contact: Margaret Stevens

Support Analyst/Programmer

London **Negotiable to £9,500**

A well established software house and systems consultancy, is expanding their London office and so have a requirement for Analyst/Programmers to support turnkey projects based on the TI990 range of computers.
Candidates must have at least 3 years experience in d.p. coupled with a sound knowledge of COBOL. An understanding, if not a working knowledge of systems in a financial area, would be an added advantage. Training in the company's products will be given. It is expected that the candidate be self-motivated as this is a responsible position.
Contact: David Hendry

Analyst/Programmer

London **c. £9,000**

An excellent opportunity has arisen with this well established organisation that is developing their data processing section, and installing new DEC hardware. The position needs an experienced person who can take on the responsibility of programming staff and also make a transition into analysis in the future.
Background must consist of solid BASIC + or BASIC + 2 programming with exposure to the analysis field. The ability to communicate with users, identify and solve problems is of prime importance.
Good prospects are coupled with excellent working conditions and substantial company benefits. **Contact: Janet Chilvers**

Communications Programmers – Babbage

London **£8,000 – £9,000**

Continuing expansion of our client's international Videotex business has created opportunities for GEC 4000 Babbage programmers in real-time and network systems.
Applicants should have at least four years programming experience and be capable of tackling packet switching, colour and business graphics, in this fast moving and exciting field. Possible overseas travel. **Contact: Jim Baker**

JAMES BAKER ASSOCIATES,
International Personnel Consultants,
32 Savile Row, London W1.
Tel: 01-439 9311.

Targa

KENT SENIOR PROGRAMMERS c. £9,000

A chance to assist with the design and implementation of major on-line systems is provided by a prestigious Kent-based Insurance Company. Aside from the challenge of linking a large number of remote sites the company offers a wide range of benefits including MORTGAGE facilities and FLEXITIME. In return the successful applicant will demonstrate a COBOL background and supervisory skills gained in a formal environment, preferably during the development of on-line and/or Database systems using large UNIVAC equipment. Ref. R3005

LONDON ANALYST PROGRAMMER c. £8,500

You may have 2-3 years' programming experience and possibly a limited amount of analysis. If you would like to see your career tend more towards design, our clients may be able to offer the chance you need. Commercial applications experience utilising CICS COBOL and TOTAL would be particularly advantageous when allied to an enthusiastic and hard-working approach. Plenty of development work in a small team.
Ref: R3233

CITY PROGRAMMERS c. £8,000

With 2-3 years' BASIC+2 or AIMS experience you could be in line for an interesting opportunity with a major International Banking Group. Excellent promotional prospects are available in a development environment together with occasional EUROPEAN TRAVEL. A comprehensive range of benefits including MORTGAGE SUBSIDY is available. Ref: J3287

MVS/JES2 SHIFT LEADER STATUS c. £9,000+

A large well-known company have a requirement for an experienced Senior Operator to enhance their expanding Data Processing Department. The successful applicant will probably have a minimum of 6 years' experience within a computer environment and have extensive knowledge of MVS/JES2 and also be conversant with VTAM, VSPC & TSO. Excellent chances for CAREER PROGRESSION exist with this company.
A vacancy at the same company also exists for an operator with 2 years' MVS/JES2 experience who is looking for a CAREER OPPORTUNITY. 2 shifts only. Ref: D3377

ICL 2905 OPERATORS URGENT c. £5,000+

A manufacturing company in Essex is looking for operators for their site. A minimum of one year's experience on ICL 1900/2900 under GL/II is required. Good company benefits include discount on products and a Bonus Scheme. Good chances for promotion available to the right applicant. 2 shifts only. Ref: D2884

10 Lines

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(5312)

SALES EXECUTIVE

c.£15,000+

An outstanding opportunity exists for a computer professional to join the UK subsidiary of a well established US Company engaged in marketing highly regarded data entry equipment which includes OCR, Key Entry and a new and unique Image Processing capability.

You will have acquired a wide experience of business applications and will have the ability to design cost effective system solutions which best meet the specific needs of each customer. You will have developed and presented sales proposals and will be capable of dealing with customers at senior management level.

The appointment carries a generous basic salary plus a sales incentive bonus scheme based on a realistic annual quota. An earnings guarantee for the first year is included with other benefits.

SALES SUPPORT ANALYST

c.£10,000+

This position will interest experienced analyst seeking a new challenge and an opportunity to work in a sales team.

The job is to provide optimum assistance to the sales effort. This includes systems investigations, proposals, benchmarks, customer presentations and installation support activities.

You must be self-motivating with the ability to communicate effectively. Some experience of OCR and Key-to-Disc techniques would be an advantage.

Earnings benefits include participation in a sales incentive bonus scheme.

Please write with full details on your career to:

The Managing Director
S. O. Systems Ltd.
36 Sunbury Cross Centre
Sunbury, Middx. TW16 7AZ

More jobs in product selling—but where are the experienced people?

by Martin Sidebottom

THE number of computer-product sales vacancies has shown a marked improvement right across the board during the last quarter. This is in contrast with the continued gloom and despondency with which the media generally bombard us.

The sudden downturn in June 1980, when experienced successful sales executives could not find good opportunities, reversed in November and has been steadily improving ever since.

Now, the picture is very healthy and leads to an interesting problem: The vacancies exist, but there is a significant lack of interest from experienced people with a good track record. I can only assume that this is a reaction to the general atmosphere of uncertainty.

Another interesting change is in the parameters which employers are using to identify the sales executive entering or moving into the market and whom they wish to recruit.

Once a successful track record has been established, the path to the top for the career oriented is a bit like the Hampton Court maze.

The management option is not necessarily the most attractive route, if income is the prime motivator in the short term. The top salespeople more often than not earn significantly more than senior managers.

The choice of management or new product is important in this respect. If the latter is chosen, the move can be to a number of related environments. However attitudes seem to be biased in some of the sales executives I meet.

Some of the options available are: Mainframes; bureaux; minis/micros; software services and consultancy; combined word processor and data processing applications; selling for OEMs; peripherals and network systems; computer room furniture; magnetic media, stationery and forms.

> **The bureau sales executive can fill his client's needs more appropriately than a one product manufacturer or distributor.**

This list demonstrates the variety of products available in the market, but, as with every other industry, myths distort the true picture.

An example is the bureau. Bureaux continually receive a bad public image in the sales profession as an outdated method of data processing and a difficult service to sell.

In reality, the product package, using powerful mainframe processors, running batch or online terminals, with the options of front end processing, an additional choice of centralised distributed data processing systems, together with standalone minicomputers, gives the bureau sales executive a vast arsenal of products. He can therefore fill his client's need more appropriately than a one product manufacturer or distributor. This, with the income package, car and fringe benefits makes the bureau a highly attractive proposition for top salespeople.

Another example is when I was asked to find applicants for the most highly paid opportunity I have yet seen in the market, involving the sale of microprocessors for a world leader, and paying a basic salary of c.£16,000, a bonus of c.£10,000, based on achieving target (unknown), plus a Rover 3.5 litre, and an incredible perks package.

When a salesperson decides that a new company could be the best way of taking a forward step, then careful consideration must be given to the variety of opportunities available. More often than not, a good recruitment organisation can be invaluable in identifying the problem and providing the solution for the individual in this highly complex market.

The problem of selling yourself to the new employer is vital to receiving a job offer in the first place and, secondly, attracting a substantial salary package.

A number of "self-styled" high fliers have parted company with their old employers or are at present failing in their need to maintain target income and standard of living. This may cause the sales manager difficulties in sorting the wheat from the chaff. The candidate must solve this problem for him.

The applicant should produce third party information to support his case early in the interview and satisfy the sales manager with evidence of results which demonstrate achievements against targets, league tables, installations, applications and price figures that have been achieved.

The applicant has responsibility in a buyer's market to establish his past record of successes.

It is now apparent that guarantees are generally extremely negotiable. Therefore, it must be up to the sales executive to prove his worth by producing year to date pay slips and other evidence as available.

Martin Sidebottom is manager of ATA Selection and Management Services, Manchester branch, covering all their recruitment activities north of a line from Stoke-on-Trent to Lincoln and up to the Scottish border. ATA specialises in sales, computer and engineering recruitment, with a network of nine branches covering the UK.

> **Those currently selling within the computer field would be well advised to consider the new opportunities continually arising within the market**

This was demonstrated the other week when a capable salesman came to see me and I introduced him to a large well known company. As a result of his presentation, based on facts, figure and personality, he obtained for himself a senior sales position with a substantial non-returnable guarantee, plus a very respectable basic salary.

The facts and figures were a sales track record of success and failures since 1966, his 1980 P60, his present employer's year to date pay slip and full details of his achievements clearly showing his ample abilities.

The client, after the initial interview, said he was the most professional salesman they had seen for some time, and intimated that if he was successful in the field his management career would take off within months.

The bottom line to this particular recruitment exercise is that the clients had no budgeted vacancies at that time, but were so impressed that an opening was brought forward some three months within 24 hours of the first interview!

A good example of how to "create" a sale.

For those with a background in systems or marketing, who believe they have the flair to succeed in a computer sales career, then today's industry may well hold the challenge and rewards being sought.

However, those currently selling within the computer field would be well advised to consider the new opportunities continually arising within the market.

For example, does your present employer offer the foremost rewards package available? Two companies with similar products and marketing approach pay vastly different salaries to two sales executives.

A quota of £300K with one company will produce earnings c.£19,000 p.a. while with another it will realise £45,000 p.a.

The questions any sales executive should ask are: Am I selling the right product in today's market place? Will I have the right product tomorrow, and am I realising my full earnings potential?

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Our client is one of the most respected OEMs in the UK. They require a proven Sales Executive to sell their commercial systems to users, based on powerful minicomputers. Basic salary £7,500 + commission + car.

Manchester-based c. £15,000
Territory Manager
This manufacturer of highly sophisticated distributed data-processing systems seeks a successful computer sales professional to sell to end-users. Basic salary £7,000 plus guarantees, commission and car.

WORD PROCESSING
Leeds-based c. £17,000 + 2L car
A multinational market leader in word-processing systems requires a successful and professional WP/DP Sales Executive to join their expanding salesforce. A basic salary c. £7,000 plus guarantees, commission and car.

Manchester and Yorkshire c. £18,000 + car
Two experienced Sales Executives with proven records are required by this highly profitable division of this major company in the office equipment market. The range includes word processing, and computer-driven photo-typesetting equipment. If you have DP/WP sales experience or have a major accounts role in office equipment we want to meet you.

Manchester and Liverpool c. £13,500 + car
This household name in sophisticated office equipment is adding a new range to their existing WP product base. They require Sales Executives to market their products. If you are well educated with a proven sales track record in a similar environment you will receive full product training.

BUREAUX
Yorkshire £13,000 to £20,000 + car
The UK's foremost bureau have expanded their product range into all DP fields and therefore are looking to recruit a well-seasoned Sales Person to sell to all levels of industry and commerce. If you have an in-depth knowledge of business systems plus sales experience in capital equipment, this is the ideal introduction to their market.

DP TRAINING
Based Manchester
Basic salary negotiable to £12,000 + bonus + car
Well-known name in data processing training are expanding, which leads to a need for additional contracts. If you have an in-depth knowledge of mini/mainframe computer systems, plus sales experience, then this is an excellent opportunity.

OEMs and LARGE USERS
Manchester-based c. £14,000 + car
World-famous manufacturer of hardware with operating systems requires a Sales Executive with a technical background to promote the use of these products to software houses, OEMs and large users, capable of applications software development.

DATA COMMUNICATIONS
North West Basic salary up to £7,000 + commission, giving c. £15,000 + car
This is one of the fastest-growing sectors in the industry. Sales Executives with a successful track record in electronics or data processing, sophisticated office equipment or technically advanced instrumentation would be ideal candidates to join this major, rapidly expanding company. Formal qualifications would be an asset but are not of prime importance.

COMPUTER ROOM FURNITURE
Greater Manchester c. £10,000 + car
This long-established British company have launched a new product line to computer users. The creation of a new salesforce gives an excellent career opportunity to Sales Executives to start a career in the computer market. Basic salary c. £5,000 + commission + car.

For further details on any of the vacancies mentioned, or for [illegible] your present career, telephone:
061-832 [illegible]
and ask for Martin Sidebottom, Joyce Sabbarwal or Alan Husbands.

ATA Computer Recruitment Ltd, Angle House, 86 Cross Street
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5311

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TECHNICAL MANAGER

The National Law Library exists to promote the use of computer assisted legal information retrieval by lawyers in conjunction with the application of computers to a wide range of activities in legal offices. To assist the part-time members of NLL, we are looking for a full-time Technical Manager to be responsible for the technical aspects of a widening range of project and consultancy commitments.

The primary requirements of the post are initiative, the ability to work on one's own and to communicate effectively with both computer and legal personnel. A thorough background in computing is essential. Experience in systems related to the practice of law desirable. The post is based in London, but travel throughout the United Kingdom will be involved.

NLL is a registered charity funded to date largely by grants from the Law Societies of England and Wales and of Scotland but further major grants are being sought to support several of the planned projects. One such grant has been secured to fund this post for an initial 2 years at a salary of around £15,000. Further details of NLL and of this post may be had from the Administrative Manager, National Law Library, Inveresk House, 1 Aldwych, London WC2R 0HF, to whom letters of application and curriculum vitae should be returned by 22 May, 1981.
[illegible]

Senior Systems Analyst Programmers

Eaton Limited, a highly successful member of the American Eaton Corporation, is involved in manufacturing transmissions, axles and related products for the commercial vehicle industry.

Here at our 500 strong Worsley Transmission Production site, two Senior Analyst Programmers are required to lead projects in a multi-phase development of new production control systems using the IBM package COPICS. The systems will operate on an IBM 4331 to be installed in the near future at our new plant in Worsley, Manchester.

Applicants should have extensive experience of systems analysis, design and programming. COBOL experience is essential and DOS/VS, CICS and DL1 would be [illegible].

Career prospects are excellent and there is scope for promotion both in the UK and overseas. A competitive salary is offered and peripheral benefits are those associated with a major international organisation.

Please telephone or write to, Andrew Tomlinson, Eaton Limited, P.O. Box 11, Worsley Road North, Worsley, Manchester. Tel: Farnworth (0204) 72111.

EATON
Truck Components
(5317)

Computer Sales People...

...does your track record match up to ours?

Just seven years, that's all it's taken for Systime to become Britain's No. 1 manufacturer of interactive business systems in the fiercely competitive computer industry—that's some track record.

We're looking for top sales executives who can live with the pace and help maintain our No. 1 position.

On target earnings £20K

Ideally with experience in selling computers, although a proven track record in selling interactive business equipment would be acceptable. A good basic salary plus generous commission becomes £20K on target. Many of our sales executives earn a lot more. Big company benefits apply including a good company car.

For details contact:
Steve Williams on Leeds 702211
(evenings 7pm to 9pm Thirsk 0845-567415) or write with brief career details to:

Recruitment Manager,
Systime Limited,
Concourse Computer Centre,
432 Dewsbury Road Leeds LS11 7DF

Interviews will be held in all major cities throughout the U.K.

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IBM TECHNICAL SUPPORT PROGRAMMER — MIDDLESEX £7,000 + neg
Up to 2 years technical support on IBM systems with Assembler knowledge. Ref: 9236SP

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HONEYWELL PROGRAMMER — MIDDLESEX to £7,500
Up to 2 years GCOS Cobol experience Level 64 on-line systems an advantage. Ref: 9246SP

HP-1000/3000 PROJECT LEADER — MIDDLESEX to £10,000 + Car
Either HP-1000 RTE, Image, Fortran or HP-3000 MPE, Image, Cobol. Ref: 9247SP

DEC SYSTEMS ENGINEER — MIDDLESEX to £10,000 + Car
Technical experience of PDP11 under RSX or RSTS/E and Macro-II. Ref: 9247SP

MOVE ONTO IBM! — HERTFORDSHIRE to £11,000
Programmers; Analyst/Programmers. Either 2 years IBM Cobol or 3 years Cobol (any mainframe). 8100 exp. an advantage. Ref: 9262SP

IBM PLI PROGRAMMER — HERTFORDSHIRE to £9,500
2 years + PLI, Assembler an advantage. Mortgage subsidy. Ref: 9239SP

IBM SYSTEMS PROGRAMMERS — HAMPSHIRE to £10,000
Exp. in installing, maintaining OS/MVS operating systems. CICS an advantage. Ref: 9256SP

PROGRAMMERS, ANALYST/PROGRAMMERS — BERKSHIRE £7,000-£10,000
Minimum 1 year's high level language on mini based systems. HP3000 an advantage. Ref: 9241SP

IBM ANALYST/PROGRAMMER — WEST LONDON £9,500
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IBM PROGRAMMERS, ANALYSTS — CENTRAL LONDON £8,000-£10,000
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SENIOR ENGINEERS — W. LONDON £A.A.E.
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Senior Analyst/ Programmer

Computer Services Barnard Castle

We are responsible for the UK manufacture of Glaxo Pharmaceuticals and their sale in this country.

The Company is engaged in the implementation of a large network of Hewlett-Packard HP 3000 minicomputers involving all Company locations and the Barnard Castle installation is a major node in this network. A wide range of advanced on-line systems is being developed, using distributed database techniques, and these are predominantly in the production planning, production recording, inventory control and quality assurance areas.

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We now require a Senior Analyst/Programmer to work initially on the HP 85 projects and subsequently also on the HP 3000 projects. Candidates should be experienced in the use of BASIC and interfacing techniques. Knowledge of Hewlett-Packard hardware/software and COBOL would be an advantage although any necessary training will be provided.

A good starting salary will be paid according to experience. Other major benefits include participation in Glaxo Group profitability schemes, a non-contributory pension scheme and relocation assistance if appropriate.

Barnard Castle is a small market town situated in a pleasant rural area with easy access to Darlington, York, Leeds, Newcastle, the Yorkshire Dales and Lake District.

Applications should be sent to Mr. A. Winn, Deputy Personnel Manager, Harmire Road, Barnard Castle, County Durham DL12 8DT or telephone: (0833) 37305, quoting reference: FY.177.

GO
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5308

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(5321)

WHSMITH

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Interviews will be held in London, 4th-7th May. Please telephone for an appointment and send CV to David Gernsey.

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System 34/Cobol	Consultants and Programmers	Caribbean, Africa Europe
MARK IV	Consultants and Programmers/Analysts	New York, Texas, Paris
COBOL/DOS	Senior Programmer	U.S.A.
IBM/OS/COBOL	Analysts/Programmers	U.S.A.
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U.K.		
UNIVAC 1100/COBOL	Senior Programmer	Essex
MARK IV	Programmers/Analysts	London
ON-LINE experience	Analyst/Designer	London
COBOL/OS/IMS or DL1	Programmer/Analyst	London
PRIME/COBOL/FORTRAN	Programmer, Analyst	London
IMS	Designers, Analysts/ Programmers	S. London London
RPG/System 34	Programmer/Analyst	London
COBOL/CICS/DL1	Senior Programmer	N. West Essex
ASSEMBLER/CICS	Programmer	Essex

Tangent

For more information telephone:

Alan Xing
TANGENT COMPUTER SERVICES
102/106 South Street
Romford, Essex
Tel: Romford 750201

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A market leader in the manufacture of process instrumentation, Kent Process Control has the advanced technology necessary to provide a broad spectrum of recording and controlling instruments, systems for the process industries worldwide.

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Advantageous for both appointments: Business experience in a manufacturing environment ● On-line experience ● IBM background.

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[5286]

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HOWLETT COMPUTER SERVICES

Saudi Arabia

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Do you want to be part of a success story for the 1980's?

Excitement, Enthusiasm and **Expansion** are the key words to describe Computer Resources, one of today's fastest growing UK Computing Services Companies.

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Computer Resources is also independent. Unlike many of our competitors, we can react quickly to meet market trends, fulfil expansion programmes and make contract decisions without time consuming consultations demanded by Parent Companies. This freedom is allowing Computer Resources to race to the top of the Computing Services league and we believe the 1980's will see us as the leading independent UK Computing Services Company.

Do we sound like your kind of company? If so, read on.

We are looking for data processing professionals who will be based at Computer Resources' data centre situated to the West of London. Previous experience in providing IBM Computing Services to a wide range of commercial and industrial clients is essential, as is an ability to build good personal client relations within a Computing Services environment.

Senior positions will demand strict appreciation of management control in a profit-making environment and will involve travel to Europe and the Middle East. Any language knowledge would be beneficial.

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To plan, direct and co-ordinate the operation of Computer Resources expanding data processing services in the UK and overseas. Experienced management of significant commercial IBM installations providing clients with a high level of service is essential.

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Telephone: 01-388 2577

Computer Resources' Professional Services Division also has vacancies for experienced systems and programming staff in its London, Coventry, Birmingham, Leeds and Manchester Branches.
Applicants should contact the Personnel Manager.

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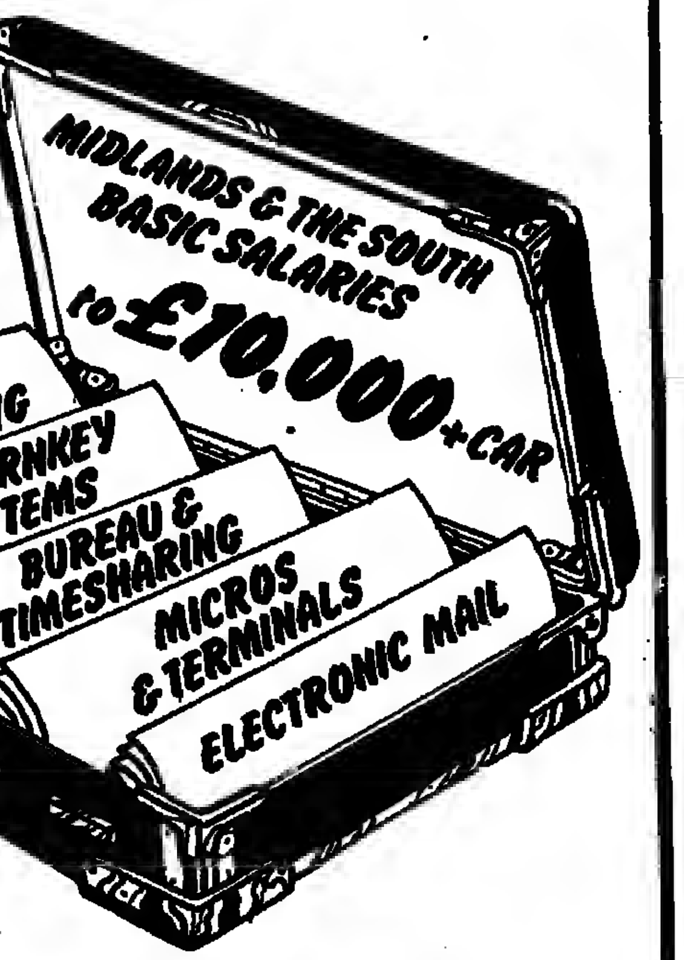

How many times in a competitive situation have you been knocked out because you couldn't supply the service or the solution? . . . Too many for comfort? If this is what you're experiencing then we have something to offer and introductions are in order.

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British Airports

(5313)

Senior Analysts/Programmers.

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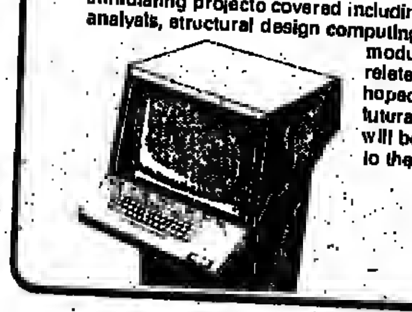

This all adds up to more scope and involvement for you as part of this small, though thoroughly professional team.

With extensive systems design and several years FORTRAN experience from within industry or local government, this will be the best move you could make.

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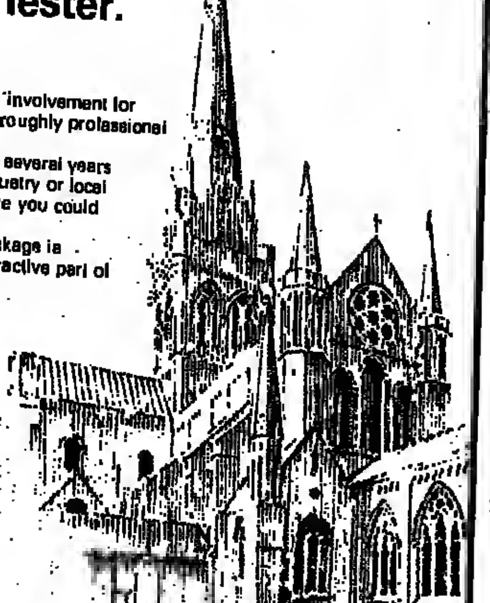
West Sussex COUNTY COUNCIL



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University of London Computer Centre

Programmer/Analysts in User Support

The University of London Computer Centre is a national centre and provides a computer service to the University of London and to universities in the south-east and south-west of England. The centre is currently equipped with Control Data 7600, 6600, 6400 and CYBER 72 computers and supports a large communications network of remote batch and keyboard terminals.

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The User Support Group is the main interface between users and the computing service, and provides advisory, documentation and user-education services, compilers, graphics and applications packages and libraries.

Ref. US81/2-A

A programmer/analyst is required to join the team engaged in the administration of computer resources. The range of the work is [illegible]nd and would suit an applicant interested in contributing [illegible]nically, in the production of software for computer accounting, and administratively, in the running of an allocation and control service. A certain amount of liaison with computer users and institute representatives would also be involved. Applicants preferably should be graduates with programming experience in Fortran. The ability to communicate clearly both orally and in writing is essential.

Ref. US81/2-B

A programmer/analyst is required to join the team providing the Advisory, Documentation and User Education Services. The person appointed will be assigned initially to the Advisory Service. Applicants preferably should be graduates with programming experience in Fortran.

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Further details and application forms are available from the Assistant Secretary, ULCC, 20 Guilford Street, London WC1N 1DZ. Telephone 01-405 8400.

Applications close two weeks from the date of the advertisement.

(5285)

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Applications should be made in writing to Mr J. M. Bradshaw, Personnel Manager UK, The Goodyear Tyre and Rubber Co (GB) Ltd, Bushbury, Wolverhampton WV10 6DB.

GOODYEAR

(5323)

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Over the last few years they have been developing and exploiting a specialised area of secure communications involving 'state of the art' techniques in digital electronics and microprocessors.

Ideally, candidates should have had 4 years experience in Hardware or Microprocessor developments, preferably within the field of communications and possess a 1st or 2nd degree in appropriate discipline.

Successful applicants will have the real incentive of developing totally new technology in an exciting field, with achievements rapidly influencing their promotion.

All re-location expenses will be paid, excellent negotiable salaries are offered and the conditions of employment are those associated with a leading international company.

Please apply in writing with details of experience and qualifications to:

Appointment No. 161

International Market Advertising Agency Incorporated, 13th Floor, Corporate House, Lime Street, Liverpool [illegible]

All replies will be forwarded direct and unopened to our client unless addressed to Security Manager listing companies to which they may not be sent.

SALES AGENTS

CITY AND ENVIRONS – EARNINGS UNLIMITED

Sell for a national distributor of the award-winning AM Jacquard videocomputers which combine, as a fully integrated system, word processing, data processing and communications.

We are currently looking for highly motivated and mature sales professionals, preferably self-employed already, who are enjoying success in their present territory but need to expand the range of products which they can offer to their customers.

Full product training and promotional material will be provided.

Please write in the first instance enclosing your C.V. to:

WORDATA

64 Gloucester Place
London W1H 3HL

MINI/MICRO SYSTEMS PROGRAMMER/ANALYSTS MAINTENANCE ENGINEERS

London based — Salary up to £7,500 per year

Stammos is a small but growing software/systems house with engineering and commercial capabilities. Our main markets are U.K. and the Middle East. Excellent opportunities exist for people with BSC and 1-3 years analysis/programming experience, preferably on Micro Commercial Systems. Languages used are Basic Fortran and Cobol. Arabic speaking would be an advantage. Also an opportunity exists for maintenance and development engineer with 1-2 years experience on micro computer and microprocessor products. We offer interesting and varied application programs. Excellent salary and conditions of employment.

Please send details of C.V. or phone to:
Dr. A. Abdallah, Technical Director, Stammos Ltd, 344 High Street, Kensington, London W14. Telephone: 6028242.

(5290)

ANALYST PROGRAMMER

PL1/Cobol — BUCKINGHAMSHIRE to £12K

SOFTWARE ENGINEER

Basic — LONDON to £9K

TECHNICAL SUPPORT MANAGER

HOME COUNTIES/MIDLANDS to £10K + Bonus + Car

For the opportunity to hear about YOUR kind of job throughout the U.K.

5336

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SURREY KT2 5HX

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The Appointments [illegible]

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datascene

SYSTEMS & PROGRAMMING

PROGRAMMERS

HERTS/ESSEX — ICL 2905 — To £8,500

A brand name of household goods manufacturers need COBOL programmers to complement their existing, well-structured team.
Candidates should have had a broad experience of commercial applications. Preferably they will want to expand their experience in a position which offers good opportunities for advancement. The company offers a good salary, exceptional holiday conditions, a pleasant working environment and a valuable bonus. The location is also easily reached from London. D.4612

PROJECT MANAGER

HERTS/ESSEX — ICL 2905 — To £10,000

An experienced Senior Analyst with at least five years' experience is sought by this leading manufacturer of quality goods.
Applicants should have completed at least one project from investigation through design to implementation but above all will have a sound knowledge of business objectives. Manufacturing experience will be an asset. ICL 2900 experience is a great benefit but is not essential.
In return the company offers an excellent salary, a bonus and generous holidays. D.5192

RPG 11 PROGRAMMERS

LONDON/HOME COUNTIES — To £10,000

Datascene have recently taken a considerable number of vacancies for RPG 11 Programmers in London and the Home Counties.
The range of industries within the client database are wide ranging but include Petrochemical, Banking, Insurance, Engineering and Software houses.
Ideally you should have at least one year's experience but preferably 18 months' together with a good standard of education.
Progression within the various departments is good as all companies offer career progression. M.GEN

ANALYST/PROGRAMMERS

SUSSEX/EUROPE — RPG 11 — To £10,000

International organisation with a UK base in Sussex require experienced Analyst Programmers. These positions will entail the development of Systems within the UK and a trouble-shooting role around Europe. Applicants must be prepared to travel at short notice and be potentially management status. Career prospects within the organisation are excellent due to the nature of the company's business and applicants selected for employment will enjoy a company package second to none. M.[illegible]

ANALYST/PROGRAMMERS

ESSEX — UNIVAC/OTHER — £7,500/£8,500

A successful manufacturing/sales company has vacancies for 3 Analyst/Programmers with Univac 1100 background, however mainframe experience of Honeywell, Burroughs and some involvement with database or real-time will be given full consideration. Ideally applicants should have been Cobol Programmers for 2 years, plus 1 year as an Analyst Programmer. This requirement is for one person with File Tab/Unitab expertise in Financial Systems and two people with manufacturing backgrounds. R.5196

PROGRAMMERS

LONDON/CITY — PDP 11/70 — c£8,500

Our client, a city based Merchant Bank are looking for programmers to augment their existing Data Processing Team. Ideally the applicants should have 2 years' experience of Basic +or Basic + 2. The installation consists of PDP 11/70s working in batch and real-time environment on applications such as Foreign Exchange and Eurobonds.
Opportunities are excellent and the employment package offered includes interest-free season ticket loans, productivity bonus scheme, staff restaurant and luncheon vouchers. R.5200

SYSTEMS ANALYSTS

HERTS/ESSEX — ICL 2905 — To £9,500

Systems Analysts with a business understanding who seek progressive careers with an established company are required by our clients.
Candidates should be experienced in ICL Hardware and have a programming background. They will have an understanding and some experience of design and structures. Training and assistance will be given when necessary. Benefits offered are those expected of a leading company which include pension scheme, bonus and generous leave plus holiday bonus. D.5193

ANALYST/PROGRAMMER

SURREY — NCR/OTHER — £8,000/£9,500

A leading company in the building industry is expanding their Data Processing Department and require a Programmer/Analyst or Analyst/Programmer to complement the existing team. An NCR mainframe is installed and a background in commercial application with Cobol will be particularly appropriate. Successful applicants should have had 3 years' plus in a commercial environment, however Real Time and/or Database experience on any medium to large computers will be considered for this post. R.5197

Datascene International Limited,
Sceptre House,
169-173 Regent Street,
London W1R 7FB. Telex: 25851.

datascene

01-439 7871
24 hour answer phone.

Computing Services Association

SCOTT WILSON
KIRKPATRICK & PARTNERS

PROGRAMMER/ ANALYST

£5,000-£7,500

We are a firm of consulting civil engineers based in Basingstoke, Hampshire. The firm operates a DEC VAX 11/780 supporting accounting and engineering applications including computer-automated draughting. Applicants should have at least one year's programming experience in FORTRAN and preferably some experience in accountancy programmes.

Please forward CV s to: Mrs Ann Hill, Staff Services (Recruitment), Scott Wilson Kirkpatrick & Partners, Scott House, Basing View, Basingstoke, Hants, RG21 2JG, Tel: Basingstoke (0256) 61161.

(5287)

LONDON BOROUGH OF ISLINGTON
FINANCE DEPARTMENT

SHIFT LEADER

(£7,747-£8,415 inc.)

Experienced VME/B Senior Operator required to run a 'fat' 2960 — soon to be dualled or twinned to support on-line database systems plus some GEORGE 3 BMEEP batch work.

The usual local government conditions of service apply.

Application form and job description available from the Director of Finance, Town Hall, Upper Street, London N1 2UD (Tel. 01-226 1234 Ext. 3151 quoting reference F125. Closing date 14th May 1981. Our jobs are open to all races and both sexes.

(6376)

PROGRAMMERS ANALYSTS/PROGRAMMERS SYSTEMS ANALYSTS

SOUTH AFRICA

Consol Limited, South Africa's leading manufacturer of glass, plastic and corrugated cardboard packaging will shortly have a representative in the U.K. to interview applicants for the following vacancies:

PROGRAMMERS:
Minimum 2 years' COBOL or RPGII programming experience.

ANALYST/PROGRAMMERS:
Minimum 3 years' D.P. experience including either COBOL or RPGII programming and some systems analysis background.

SYSTEMS ANALYSTS:
Minimum 4 years' D.P. experience and must have previously undertaken complete design and implementation of at least one system. Programming experience preferred.

The company currently operate an I.C.L. 2956 mainframe which will be upgraded in the medium term to the 2966 level. A system of 7500 terminals is being installed operating under VME/K using TPMS and IDMS.

Very attractive fringe benefits, free passage and assistance with accommodation are offered.

Applicants will find that incomes, tax levels and the general standard of living will prove to be superior to those prevailing in Britain.

Please write in the first instance, giving full details of past experience and present position to:
Consol Limited, c/o Mr. L. James, Vallers Chambers, Victoria Street, Douglas, ISLE OF MAN.

OIL COMPANY

BUSINESS AND TECHNICAL SYSTEMS STAFF

up to £11,500

Amoco Europe Incorporated is an affiliate of Standard Oil Company (Indiana), one of the six largest US oil companies.

At our London Data Centre we are in the process of installing an IBM 4341 processor to supplement our existing IBM 3031 mainframe which is linked to a number of remote terminals in the UK and Europe. Operating software includes VM/SP, OS/VS1, CMS and IMS DB/DC.

We currently have four vacancies within our Information Services Department which provides data processing services to all Amoco's UK and European interests in oil and gas exploration, production, refining and marketing.

Business Systems

- Senior Analyst or Senior Analyst/Programmer
- Analyst Programmer
- Programmer

Applicants will ideally have a strong IBM COBOL background. Mark IV knowledge would be an advantage. The senior position will require good analysis skills and may involve occasional travel to our affiliate company in Norway. The successful candidate for the post of Programmer will initially be assigned to work at our Marketing Company's Wembley headquarters.

Technical Systems

A vacancy exists in our Technical Systems Group for a Programmer with experience of FORTRAN in an IBM installation. The ideal candidate will be a University graduate in a numerate discipline. Previous experience of oil industry technical applications would be advantageous.

In addition to highly competitive starting salaries, between £8[illegible] – £11,500, a range of benefits are provided including contributory pension scheme, £1.50 per day luncheon vouchers and interest free season ticket loans.

Please contact Brian McLintock on 01-408 1555 for more details. Alternatively, send a comprehensive career history to Employee Relations Department, Amoco Europe Incorporated, 38 Cavendish Square, London W1M 9HF.

AMOCO

(6328)

THE LETTERS AFTER YOUR NAME COULD MEAN A LOT TO US....

c£11,000
bonus and interest free
car loan

Database Designer
.................................IMS DB/DC

The increasing need for information has resulted in our large and diverse User base recognising the value of database technology, and the seeds of change are now beginning to grow. As a company we are starting to 'think' database and IMS DB/DC will be used significantly in future developments. Consequently we are looking for an individual with experience of database design gained within an IMS environment. Several new projects are planned including a Sales Information System which will provide considerable challenge to the successful candidate.

Technical Specialist
.................................ACF/VTAM, NCP

Using ACF/VTAM and NCP we are developing a Multi System Networking facility for our mainframe and mini computer installation. Our Technical Support Team is responsible for supporting a wide range of software such as MVS, JES, CICS, IMS, VSPC, APL and works as a closely knit and highly proficient team. We would like to recruit a VTAM specialist to assist with our development plans and can offer a highly professional, stimulating and, we believe technically challenging environment in which to work.

These are ideal opportunities for ambitious individuals to take up vitally important roles in a prestigious IBM installation.

We are a well respected employer who can offer excellent conditiona of employment and a technical growth plan to suit the most ambitioua. We realise that the skills we are seeking are hard to find and will therefore be prepared to use flexibility when considering each candidate. We are located in a pleasant part of Birmingham offering a superb choice of housing and will offer a generous relocation package to those moving to the area.

To arrange a confidential and informative meeting contact our Advising Consultant
MARTIN STAINTHORPE on 021-236 3781 (24 hour answering service)
or 021-744 1862 (evenings 7-9pm and weekends).

SCR

London 01-935 0671-3 Mandeville Place, Wigmore Street, London W1M 5LB.
Birmingham 021-236 3781 35-37 Great Charles Street, Queensway, Birmingham B3 3JY.
Manchester 061-833 0427 Blackfriars House, The Parsonage, Manchester M3 2JA.
Brussels 010 322-640 7151/71 Avenue Louise 327, Boite 4, 1050 Bruxelles.
Amsterdam 010 3120-760947 Willemsparkweg 92, 1071 H.M. Amsterdam.

Specialist Computer Recruitment Ltd

Computing Services Association

IBM DOS OPERATOR £5,500
C. London aite require an operator with et least 6 montha DOS experience. Opportunity to learn DOS/VSE on a 4341.

IBM OS OPERATORS £6,800
City aite currently looking for an operetor with around 18 months OS/VS1 experience. Excellent perks include a aubsidised mortgage.

IBM DOS OPERATOR £6,200
Operators with 1 year DOS/VS knowledge required by South London Installation. Good chance to learn VSE under 4341 and JCL.

IBM OS & DOS OPS SUPPORT to £6,500
2 sitea (central & W. London) require operations technicians with good JCL knowledge and Utilities, for day only position.

ICL 2900/DME OPERATOR £5,500
Expanding Installation East of London seeks operatore with small 2900 mainframe experience. Perks include s/t loan and company product discount.

ICL 19/2900 GII/DME OPERATOR c £6,000
Large London site currently requires an operator with the above skills to complement the existing team. Due to Internal promotion career progression is assured. Excellent perks offered and salary review pending.

ICL VME/B TECH ANALYST £10,000
Large company utilising ICL 2960 hardware is seeking a technical analyst. Applicants should have at least 2 years Cobol programming experience as well as strong JCL and MACRO knowledge. This is a senior technical position and the successful candidate will join a small team involved with the maintenance and development of VME/B and associated software.

PROGRAMMER/AUDITOR to £9,000
BASIC/BASIC+
Applicants working in a financial environment with at least 2 years BASIC-/BASIC+ experience are required by C. London bank. The post is in a relatively new but small auditing department hence the need for a financial background. Candidates are expected to be in their mid twenties, educated to degree level and be prepared for some travel abroad. Usual banking benefits are offered.

PROGRAMMER c £9,000
IBM COBOL
Programmers with 2 years IBM DOS COBOL experience are required by a large International company in C. London. Knowledge of structured programming techniques and CICS would be useful but by no means essential as training will be given. Opportunity to work on a wide range of new developments. Excellent salary and perks are offered.

PROGRAMMER c £7,000
ICL COBOL/PLAN
Financial organisation based in C. London require a programmer with around 18 months experience. A good knowledge of PLAN is essential as COBOL training will be given where necessary. Opportunity to learn new hardware and systems as the client is currently undergoing a change of mainframe. Usual large company benefits are offered.

PROGRAMMER £7,500
IBM RPG II
Large industrial concern situated in N. London requires programmers with a minimum of 18 months RPG II experience gained in an IBM environment. As well as usual benefits the company also offers an annual bonus scheme.

JUNIOR PROGRAMMER c £5,400
ANY LANGUAGE
An expanding service bureau requires 2 programmers with around 1 year experience in any commercial language gained in a commercial environment. Candidates who have been educated to degree level are highly favoured. Excellent working conditions and prospects in this small and informal programming team.

This is just a small selection of current requirements. For details of these and others not advertised, please contact us on
01-242 1191 or 24 HR ANSAPHONE
01-242 5994

Apex

Apex Computer Recruitment Ltd
59 Grays Inn Road, London WC1
01-242 1191

هكذا من الأصل

MANAGEMENT & EXECUTIVE SELECTION

telephone 01-637 9611

COMPUTER GRAPHICS SALES PEOPLE

£10K basic + commission + 2-litre car

North West & North East
London

The world market leader in the sales of computer graphics systems and peripherals has created an exciting opening (by promotion) for a sales person wishing to enter this high growth market.

You will be joining a company that has an outstanding reputation for the quality and range of its products; for the service it provides and for the benefits its employees receive.

A good track record, preferably with an engineering/electronics bias is all you need . . .

Call Tony McGrath on 01-637 9611 for an immediate interview.

PCM SALES PEOPLE

£19K + car

LARGE SYSTEMS SALES
London and South East

We have been retained by the foremost suppliers in the PCM market place to identify and select a good sales executive for their southern operation.

They have gained significant market penetration into new areas and are now looking to further expansion and growth.

A mainframe or large disc systems background, preferably in an IBM or IBM knockout environment, are the requirements.

The package, the car and the benefits are what you would expect from a major organisation.

Call Tony McGrath on 01-637 9611 for an immediate interview.

COMPUTER GRAPHICS SUPPORT PEOPLE

£8½K + car

North of London

The world's number one supplier of sophisticated computer systems and peripherals is now offering a great career opportunity to young sales support professionals.

You will need a good knowledge of Fortran/Basic, preferably have a degree in engineering and as the position requires a high level of customer contact, the ability to communicate is essential.

The company offers excellent benefits in terms of training, personal development, working conditions

FOR THE RIGHT MOVE RIGHT NOW CALL DIANE OUBRIDGE ON 01-637 9611.

As the largest producer and distributor of data multiplexers in the world our client is significantly expanding their operations in the U.K.

They have retained us to identify a **Senior Sales Executive** for the Midlands area.

A sound knowledge of the datacomms industry coupled with the ability to handle negotiations to the highest level are the prerequisites on experience.

A high basic salary and excellent commission scheme with above average benefits are the rewards.

For further information contact Tony McGrath on 01-637 9611.

Timeplex®

Suite 201/6 Albany House 524 Regent Street London W1R 5AA 01-637 9611

MANAGEMENT & EXECUTIVE SELECTION

(5305)

CROSSWORD

Solution to Prize Crossword 15

1 S	E	2 C	E	3 D	E	■	■	4 W	I	5 L	D	6 C	A	7 T
A	■	R	■	E	■	8 E	■	O	■	O	■	O	■	H
9 C	H	E	A	P	J	A	C	K	■	10 O	R	M	E	R
K	■	E	■	A	■	R	■	E	■	F	■	E	■	O
11 B	A	L	E	R	■	12 W	I	N	C	A	N	T	O	N
U	■	■	■	T	■	I	■	U	■	■	■	O	■	E
13 T	U	14 R	N	I	N	G	■	15 P	O	16 I	N	T	S	■
■	■	E	■	N	■	■	■	■	■	N	■	H	■	■
■	17 W	E	I	G	H	18 T	■	19 L	I	F	T	E	R	20 S
21 B	■	L	■	■	■	O	■	I	■	U	■	■	■	P
22 A	V	E	R	23 S	I	O	N	S	■	24 R	E	25 V	E	L
R	■	D	■	O	■	T	■	S	■	I	■	O	■	I
26 S	P	O	O	L	■	27 E	G	O	M	A	N	I	A	C
A	■	F	■	V	■	R	■	M	■	T	■	C	■	E
28 C	O	F	F	E	R	S	■	■	29 L	E	G	E	N	D

THIS month's £10 winner is Mike Orriel, a systems facilities planning supervisor at BL Systems Data Centre in Redditch. The winners of £5 are Paul Woodward, a programmer with E. J. Arnold in Leeds, and Trevor Ballinger, an analyst programmer at the Royal Naval Store Depot Copenacre, in Hawthorne, Wiltshire.

Monaco-based

EUROPEAN SUPPORT

Due to expansion, an opportunity exists to join the International Support Organisation of a highly successful American manufacturer of small business/word-processing systems.

The Monaco office provides technical support and training for a rapidly expanding network of distributors throughout Europe.

Experience in at least two of the following areas is required:

1. MINI/MICRO Systems
2. Operating System and File Management Concepts
3. Data Communications
4. BASIC or similar high-level language

Applicants must be fluent in English, and be willing to travel extensively throughout Europe and sometimes farther afield.

Previous experience in a support role, and a working knowledge of French or German, would be an advantage.

Please apply in writing with CV, etc., to:

Mike Plett

CADO SYSTEMS INTERNATIONAL

Le Panorama, 57 Rue Grimaldi, Monte Carlo
Principality of Monaco
Tel: (France) 93-304428

(5340)

Packet Switching • Transport Service • X25
PDP 11 • File Transfer Protocol • RSX 11M

Network Development Opportunity

An opportunity exists to join a team in Swindon engaged on state-of-the-art networking projects. While experience would be welcome, we are also interested in an individual who can convince us of his or her enthusiasm to work in this exciting area.

The Natural Environment Research Council is a Government funded body responsible for research in the environmental sciences. Conditions of service are analogous to those of the Civil Service.

Qualifications and experience

The post is graded at Scientific Officer/Higher Scientific Officer level. To qualify you will need a degree or equivalent in a scientific, mathematical or engineering subject. For HSO you should also have some post graduate experience.

Salary and conditions

Scientific Officer £4,809 – £6,480 pa
Higher Scientific Officer £6,075 – £7,999 pa
Salaries are currently under review

Starting salaries may be above the minimum of the scale, according to age, qualifications and experience. Benefits include a non-contributory pension scheme.

For further details about the work, contact Mike Hughes, Tel. 0793 40101 ext. 398.

Application forms, quoting ref. 57 are available from Mrs. P. Judson, Natural Environment Research Council, Polaris House, North Star Avenue, Swindon, Wiltshire. Tel. 0793 40101 ext. 481.
Closing date: 14th May 1981.

Natural Environment Research Council

Satellites • Unix • Packet Switching • Trans
port Service • X25 • PDP 11 • File Transfer •

5330

Education Service
Ealing College of Higher Education

Applications Programmers (2 Posts)

Salary: £6540-£7134 per annum inclusive

required for a Prime 500 computer being installed during the summer. The work is varied and will include applications on Microcomputers. Applicants should have a degree or equivalent and be fluent in at least two programming languages.

Application forms and further details available from Chief Administrative Officer (TD/u) Ealing College of Higher Education, St. Mary's Road, London W5 5RF. Telephone number 01-579 2424.

To be returned within fourteen days of the appearance of this advertisement.

Please quote ref: ED 304.

(5338)

Ealing

The University of Birmingham

SYSTEMS ANALYST

Applications are invited for the post of Systems Analyst within the University's Administrative Data Processing Unit. The successful candidate will join a team of analysts responsible for developing on-line financial, payroll and student record systems on the Unit's ICL 2904/50 computer.

The post calls for a person of proven experience in the data processing field including at least 18 months in systems analysis. Previous experience with ICL equipment, while not essential, will be valuable; familiarity with financial and personnel record systems and with current on-line techniques will be expected.

Salary on scale rising to £10,575, starting point according to qualifications and experience.

Further particulars and application forms, which should be returned by 18th May, 1981, are available from:

Senior Assistant Secretary, The University of Birmingham, P.O. Box 363, Birmingham B15 2TT.

(5221)

Business Machines TECHNICIANS

Saudi Arabia c. £12,500

Technicians needed to install and service screen-based word processors, small business computers and other office machines for an installation and servicing company based in Riyadh. Bonuses on merit. Single status initially, M/S later

C.Vs, quoting Ref: 38/SML/357, to F. J. Balleck Associates, 17 North Hill, Colchester CO1 1DZ. Telephone: 0206 65252

(5112)

Analyst Programmer

Maidstone c. £8,000 pa.

The Company will shortly be installing an IBM 4331 computer using DOS/VSE and CICS, and wishes to recruit an Analyst/Programmer. The job holder will report to the Data Processing Manager, and assist him in the design and implementation of new applications, maintaining current application and writing programmes when necessary.

The successful applicant will have had at least three years experience programming on an IBM machine using DOS and CICS and 12 months involvement with systems and design and their implementation. Experience in PL/1, or assembler would be an advantage, but training will be given where necessary.

Please write or telephone for an application form to: The Director of Personnel,
KEY TERRAIN LIMITED, Aylesford,
Maidstone, Kent. Tel: Maidstone 77811.

(5283)

A REED INTERNATIONAL COMPANY

TERRAIN

UNIVERSITY OF GLASGOW
COMPUTING SERVICE

GRADUATE TRAINEE

Within the Operations Division of the Computing Service a vacancy has arisen for a recent graduate wishing to pursue a career in operations management. The Service employs 20 staff directly engaged in operating a wide range of computing equipment, including a large 2976 ICL mainframe, an expanding communications network, several mini-systems and a number of RJE stations.

The vacant post is at Chief Operator level (salary range [illegible]-£7734) and its principal responsibilities lie in the areas of

(a) the selection and training, general administration and discipline of operations staff;
(b) the definition, revision and documentation of operating procedures;
(c) the preparation of routine statistical reports on services offered.

Suitable candidates are likely to have degree-level qualifications in Computing Science. On successful completion of training, the Chief Operator will be recommended for advancement to Assistant Computing Manager.

Further particulars and application forms (to be returned by 15th May) are obtainable from Miss S. Kelly, Computing Service, University of Glasgow, Glasgow, G12 8QQ (Tel. 041-334 8771 Ext. 37).

In reply please quote Ref. No. 4315

(5335)

DIBOL PROGRAMMER

LONDON NW4

A fast growing commercial software house based at Hendon Central requires an experienced Dibol programmer. Knowledge of COBOL a distinct advantage. Great prospects and best salary for the right qualifications. To find out more ring Alan Clayman on 01-202-2864 anytime.

DATAMODE (COMPUTER SERVICES) LTD
RODARY HOUSE
ALBERTON CRESCENT
LONDON NW4 3XX

(5314)

BRIGHTON TECHNICAL COLLEGE
Faculty of Commerce
A vacancy now exists for a

LECTURER IN COMPUTING

(Salary rising to £10,431 p.a.)

The person appointed will become one of a small team whose responsibility will be the further development of computing studies within the Business Studies Department, with particular reference to Programming and the Application of Microcomputers to Small Businesses. The appointment will involve, inter alia, teaching students on BEC/TEC National Courses in Computer Studies.

A relevant qualification, up-to-date experience in the commercial application of computers and an enthusiasm to train others are essential requirements.

Further particulars from the Principal, Brighton Technical College, Pelham Street, Brighton BN1 4FA. Tel: Brighton (0273) 685971.
Closing date 12 May 1981.

(5262)

CONTRACTS

LONDON, HOME COUNTIES, MIDLANDS
for people with experience on or with:

INTEL 8020 Multibus	£370 p.w. + exp.
VAX System Software	£370 p.w minimum
VAX RTL/2	£375 p.w. minimum
HP 1000	£350 p.w. minimum
APL Financial	£340 p.w. minimum

Please contact: Sycom Computer Systems Engineers Ltd, Market House, Market Square, Aylesbury, Bucks. Tel. (0296) 32023.

(5342)

GUIDE TO RECRUITMENT CONSULTANTS IN THE U.K

LONDON & H. COUNTIES (LH). MIDLANDS (M). NORTH (N). SCOTLAND (S). OVERSEAS (0)

Computer Professional Recruitment Consultancy
"COMPUTER PROFESSIONALS — MAKE SURE WE HAVE YOU IN MIND"
Head Office 0532 774040
Evening Bretton 580
Evening [illegible]

Ivor Norton Management Services Ltd
Recruitment Consulting Division
52 Shaftesbury Avenue, London W1V 7DE
01 734 9862 (24 hour answering service)
P.O. Box 63, Copthall Tower House,
Harrogate HG1 1TS. Tel: Harrogate 66628

COMPUTER INDUSTRY SPECIALISTS
SALES • SYSTEMS • MARKETING • ENGINEERING • PROGRAMMING
INSIGHT MARKETING & PERSONNEL CONSULTANTS LTD.
AUSTIN HOUSE, CHARLOTTE STREET, MANCHESTER. TEL: 061-236 [illegible]

FOR THE BEST PERMANENT AND CONTRACT JOBS IN THE NORTH OF ENGLAND
Victoria Appointments
24 Mosley Street
Manchester 2
Phone:
061-236 7316 or 7417
061-440 8136 (Home)
(N)

FOR FURTHER DETAILS OF THIS WEEKLY FEATURE CONTACT OWEN KELLY, 061-872 8861

SMR

Sales & Marketing Recruiters Ltd
Victory House, 99 Regent Street, London W1R 7HB
A Sales and Marketing Services Company
London & Midlands

Sales Executives

Has the challenge gone out of your job?

The trouble with a lot of selling jobs is that they gradually become less and less stimulating due to the repetitious nature of the applications area or limitations of the product range. Job satisfaction declines and so does sales performance.

There is little danger of that kind of problem with our client, that is assuming your enthusiasm could be contained by systems ranging from transaction processing to communications networks, applications from finance to meteorology and hardware from mainframes to micros.

Our client is a

London

based systems house within Europe's largest service organisation, specialising in the provision of micro and minicomputer based computer systems and consultancy services with particular emphasis on scientific and technical applications.

We are seeking an experienced senior sales person, with a proven record of sales success, preferably from a services background, who can make a significant contribution to the revenue growth of this young company.

An attractive income package will be paid with a basic salary of up to £12,000 with an initial guarantee against commission earnings which will give an on-target income of up to

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LECTURER I

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Applicants (male or female) should possess relevant qualifications and experience.

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You will report to the European headquarters near Amsterdam and be based near London.

Ideally, you will have good self-starting abilities, good reporting abilities and a good understanding of the computer and industrial/scientific markets. An understanding of American companies and computer graphics would be an advantage.

You will probably be under 40 and must be able to travel to Europe and The States occasionally.

We are looking for one of the best sales managers in Britain and are prepared to negotiate the rewards. However, you can be certain that the salary and the incentive bonus will reflect the importance of the position.

If you believe that you could do the job, please send appropriate career details to me.

Henk Gerritse (European Sales Director)

Ramtek

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SALES BIT

Women in selling—2

A question of 'horses for courses'

IN the second half of this two-part article on women and their role in selling I would like to direct my thoughts to the broad strengths and weaknesses of women related to men within the selling environment.

It is reasonable to state that neither sex has a monopoly on any human attribute. Many men are more able to take care of a home and bring up children than many women. Many women can be better athletes, engineers and businesspeople than many men. However, in a discussion of this kind one can only deal with the generality of these human characteristics that are normally *expected* of the male and female of the species.

There are many qualities well suited to the selling role that are found more often in women than in men. They are usually more tolerant, sensitive, creative, patient, and articulate than men. It is also a reality that there are more male buyers than there are female, and because of the basic animal forces that no one in their right mind will pretend to be irrelevant, they usually find it easier to get appointments.

To me their biggest advantage is the "Avis" syndrome, where because society has placed women in a secondary role within the business environment, they just naturally try harder.

On the other hand, many women show classic weaknesses that can put them at a disadvantage in a selling role. Often they are more susceptible to stress than their male counterpart. They are not very keen on cold canvassing or handling the rigours of sales which necessitate aggressive selling techniques accompanied by a high rate of refusal. One kind of sales job that is usually unattractive to women is the type that demands long periods of time away from home.

This is not only from the obvious pressure of being isolated in unfamiliar places, but also the reality of often having to fend off the sexual advances and patronisation of salesmen who find themselves in the same position.

All in all women, like men, are typically better suited for some kinds of selling jobs than others according to the human characteristics, skills and experience of the individual. It is all a question of "horses for courses".

Without a shadow of a doubt women have a considerable contribution to make to selling and the sooner it becomes the natural assumption of any woman, the better it will be for society as a whole.

The other day I was talking to a senior salesman, who works for one of the major computer manufacturers, about "100% C[illegible] and the likelihood of [illegible]matic reducti[illegible] salespeople who wi[illegible] in 1981, the economi[illegible]sion being the basis [illegible] conversation.

"Well", he said, "if the number of salesmen who make it at our branch decreases any further, there's likely to be no one going to. After all, only two made it last year. One of them only just scraped in but the other made it comfortably."

"Your resident super salesman?" I quipped.

"I suppose so," he replied. "Makes you sick really, 'specially as she's a woman!"

Alan Williams

COURSES

- A TECHNICAL introduction to Pascal will be given to a seminar organised by Slough College of Higher Education on May 11. Intended for DP managers, programmers and analysts the course will cover the relationship of Pascal to Ada; its versatility, efficiency and portability; syntax and structured approach. Lecturer is David Lightfoot, author of Pascal Programming. The course costs £40. Details from Dr Eva Huzan on Slough 34585, ext 37.

- AN opportunity for marketing researchers to grasp the extent to which DP applications developments are changing information collection and analysis will be provided on an IMRA training course, to be held at the Holiday Inn, Chelsea, on May 13 and 14. Data Processing in Industrial Marketing Research will include demonstrations of hardware and software and tuition will include computer interviewing, forecasting and data storage and retrieval. It costs £165+VAT, with a £15 discount for IMRA and MRS members. Details from the course secretary on Lichfield (05432) 23448.

- MANAGERS, users and DP professionals from the banking, insurance and finance industries may benefit from a course entitled Minicomputer and Distributed Processing in Banking, Insurance and Finance, to be held at the Clive Hotel in London from May 13-15. Organised by Control Data Institute, the course aims at management level. It costs £415. Further information from Hillary Colyer on 01-240 9400.

PUZZLE ANSWER

Let ABC,DEF be 1,000x+y, and let (x+y) equal z. Then $1{,}000x+y=z^2$ gives

$$x=\frac{z(z-1)}{999}$$

Further research shows that z and (z−1) must each contain one of the two main factors of 999 — ie 37, and 27. Diophantine calculations now bring forth 494,209 as the only solution.

ComputerWeekly
Thursday, April 30, 1981

Siemens teletex unit leaves UK standing

by Rory Johnston

GERMAN manufacturer Siemens has stolen a march on UK suppliers by announcing the launch of a teletex terminal for use here while local firms are still only talking about their interest in the idea.

Two weeks ago British Telecom issued its blessing on the scheme for communicating word processors, hoping UK manufacturing would come up with terminals by early 1982.

The Siemens machine is a special-purpose design with an optional screen, with a probable price tag of between £3,950 and £5,500, depending on the version.

With the keyboard and printer will be memory and automatic dialling and answering equipment to enable documents to be sent through the public telephone network without operator intervention.

The terminal should be available late this year.

For a word processor without teletex facilities these prices are fairly low, so the Siemens machine will be a major competitive challenge. The principal UK supplier to which British Telecom has been talking is ITT Creed, which has a special-purpose terminal under development, but is not saying when it will be ready. The work already done by ITT's German sister SEL will probably not be used.

A spokesman for Plessey said the company was looking into developing hardware. Plessey is expected to announce its plans for a complete office automation system late this summer, and teletex may be a part of those.

Companies that already have word processors on the market may be in a better position. Muir Moffat of Nexos said that adapting his firm's 2200 with the addition of a hardware interface and extra software was "not a mammoth task".

Harry Mallinson of Wordplex said his company did not want to go ahead with the work until the international specifications are clear, to avoid repeating effort, but Mallinson saw his teletex being available sometime in 1982.

● Donald Kennett adds: British Telecom has ordered 2,000 electronic telex terminals, providing editing and automatic dialling facilities, for use on the existing telex network only.

The terminals are being made by Trend Communications of High Wycombe, Bucks, under a £3 million contract and will be delivered over a 12-month period starting late this summer. The first ones are expected to go to users in the City of London where there is a strong demand for enhanced facilities without going to a mini-based message switch.

ATKINSON: development in the computer industry is 'fragmented and incoherent'.

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BC micro to be expandable

by Eileen Stainer

THE release of hardware specifications for the BBC's television series microcomputer has shown the machine will be expandable to include a 16-bit microprocessor. Since the BBC announced its decision to choose Acorn Computers several weeks ago, complaints have been voiced by a number of UK micro manufacturers objecting to the Cambridge company.

But a spokesman for the BBC said that ambitious plans have been made for the BBC microcomputer to enable users to carry on learning without restrictions on hardware. An expandable system is to be used, to allow beginners to progress to on a specific application when confidence and experience in computing is gained.

The system is to have a flexible dual processor configuration with the facility for an 8-bit or 16-bit device to be used as the second processor. No decision has yet been made as to which 16-bit microprocessor it will be, but those under consideration are Motorola's 68000 and National Semiconductor's 16000.

The second processor will be classed as an expansion option and will be available in an add-on box in three versions. Each one will contain a different microprocessor to the standard, a two megaHertz 6502 eight-bit device manufactured by the semiconductor subsidiary of Commodore International, MOS Technology.

For around £395, the second processor will be either a three-megaHertz version of the 6502 or Zilog's eight-bit chip, the Z80, enabling the user to run the standard CP/M operating system and its mass of associated software. An additional 64K or RAM to the standard 16K will be included in the package.

An approximate price of £995 will be charged for the 16-bit second processor expansion, and this will come with an extra 128K of RAM. All these expansions are expected to be available from early 1982.

DoI attempts to unify the industry

by Rory Johnston

A MAJOR effort to draw government, computer suppliers and users together is being launched by the Department of Industry, in the form of a high-level committee under the chairmanship of Parliamentary Under-Secretary Michael Marshall.

The committee is to be called Focus, and in the words of its secretary, Reay Atkinson of the DoI, it is intended to make a "strategic thrust", particularly in the area of standards, to rectify the current "fragmented and incoherent state" of development in the UK computer industry.

Three subordinate working groups of experts are being set up, to cover public sector users, private sector users, and the industry. The overall aim, said Atkinson, is to "draw together the national efforts in standards," realising that government procurement is an essential part of this.

Thus it appears that a positive decision has been taken to impose standards through the specifications laid down in public purchasing. It is recognised that as a consequence government users must specify products that can be sold in international markets. Of all UK computer purchasing, 35% is by the government, so this is regarded as of great importance.

Others on the central Focus committee will be: David Fairbairn of the NCC, John Leighfield of BL Systems representing industry, and Gerald Watson, head of the Central Computers and Telecommunications Agency.

The committee will also, in Atkinson's words, be "trying to get manufacturers together with software people." He added, "We realise there are implications to do with resources and manpower," and explained that these broader issues would also be investigated and incorporated into the committee's strategy.

Irish firm jettisons compute

by Tom MacSweeney

IRELAND'S largest food w saler has taken the unusual of disposing of its compute cause of high running costs.

The company, Musgrave's made eight staff redundant result and claims it will £100,000 a year.

Musgrave's had plann invest £750,000 overall in co terisation and two of its cash carry outlets had been co terised, at Ballymun in Dubli in Cork.

Managing director Hugh Keown said they had no fa find with the Hewlett-Pa system or with the software now believed that computers not suited to cash-and-carry o tions. They had made ce chores more laborious, and puterised labels cost £10,000 a more than ordinary labels.

Derek Smorthit, general m ager of the Irish division of H lett-Packard, in a public comm said he had been assured by M grave's that the hardware worked perfectly well. The sy was not sold or installed dir by Hewlett Packard, but by a company, Computer Resource

The discarded system, an 21MX, was installed four years on a turnkey basis by Comp Resources. Colin Appleton, Computer Resources, says: " have a natural feeling of dis pointment because there has b a lot of investment from their s and our side."

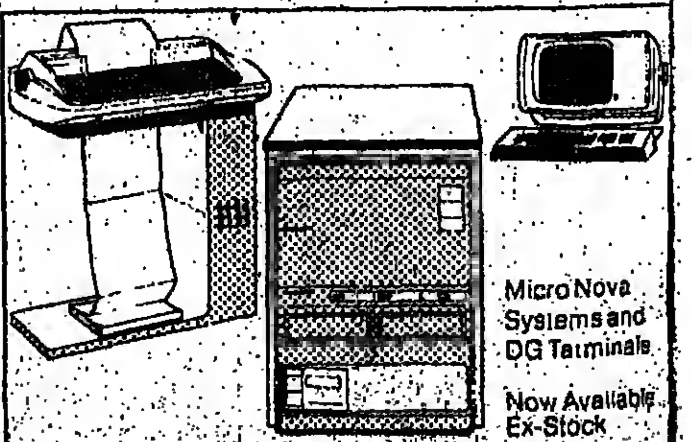
Abacus and Comma link

by Kevin Cahill

ABACUS and Comma have consummated their expected merger to produce a new grouping with total projected turnover for 1981 of over £11 million.

The deal in which Abacus, a public limited company, acquired privately-owned Comma for a substantial but undisclosed figure, is aimed at giving the Newbury-based electronics company a presence in the computer market.

Essex-based Comma was founded in 1975 by George Macfarlane and is primarily a supplier of the DEC-compatible Hawk, Robin and Eagle range of systems.



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